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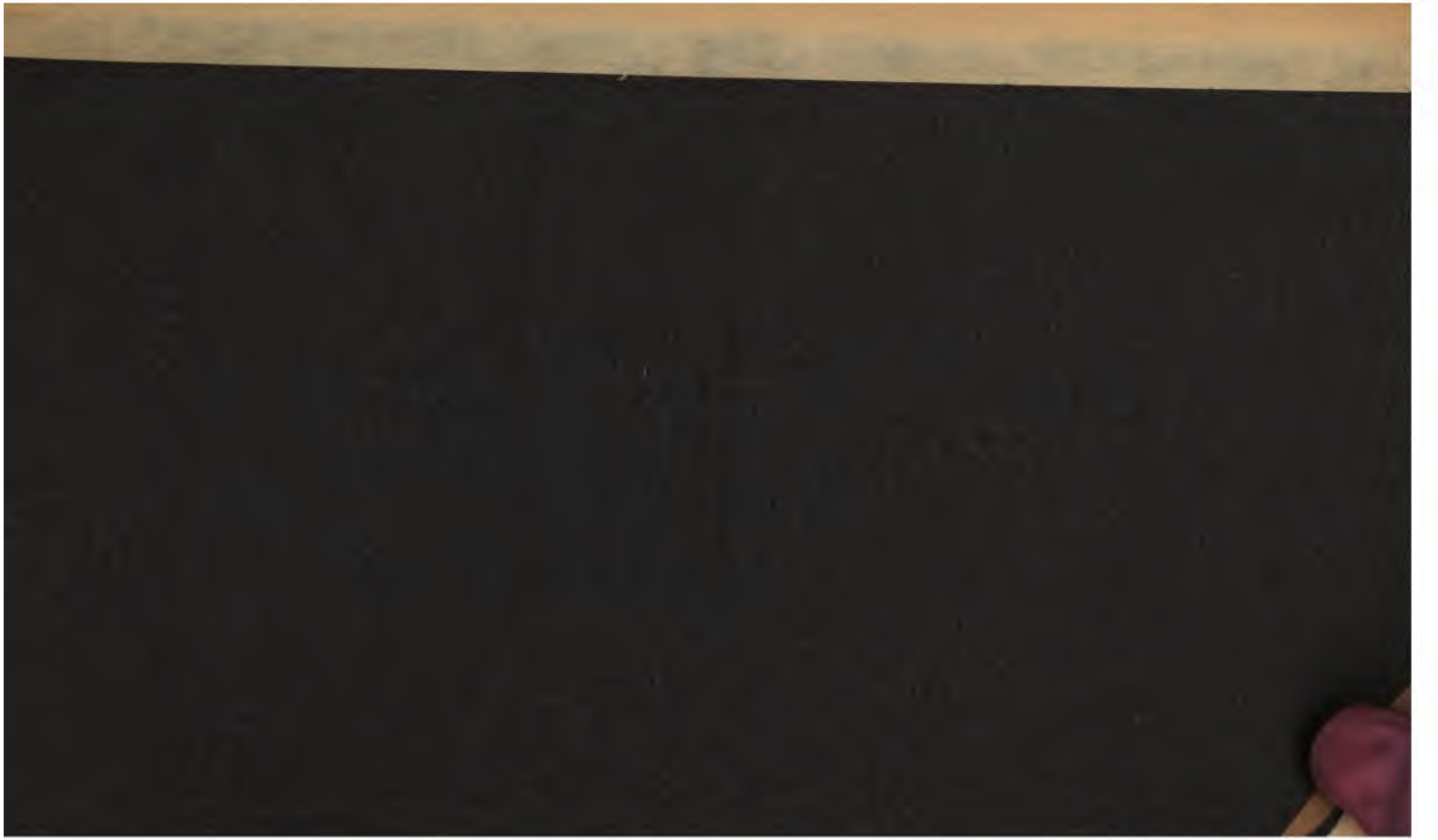

POWER PLANT SECTION

OF THE

MECHANICAL INDEX

COMPRISING

Steam Appliances, Power Transmission Appliances, Pumping Apparatus, Etc.

Also Hoisting and Conveying Machinery and Mining Machinery.

INCLUDING AN ALPHABETICAL LIST OF MANUFACTURERS AND A GENERAL INDEX TO HEADINGS.

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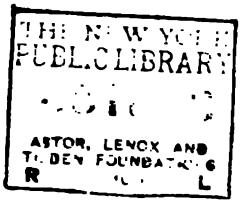
1905.



INDEX TO DEPARTMENTS.

	Page
Boilers	57
Engines	83
Motors	100
Steam Appliances in General	101
Power Transmission Appliances	146
Pumps	178
Hoisting and Conveying Machinery	231
Industrial Railways	254
Mining Machinery	258

Alphabetical Index.

Advertisers and Manufacturers

Steam Appliances, Power Transmission, Pumps, Etc.

This list does not include makers of tubular boilers as these are arranged alphabetically according to States.
See pages 59 to 82 inclusive.

Abele, Chris, 537 West 50th St., New York.—Couplers. Pulleys.
Abendroth & Root Mfg. Co., 99 John St., New York.—Riveted Pipe, Water Tube Boilers.
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ALPHABETICAL INDEX.

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Allis-Chalmers Co., New York Life Bldg., Chicago, Ill.—Boilers, Engines, Power Pumps, etc.
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Ames Iron Works, Oswego, N. Y.—Boilers, Engines.

ALPHABETICAL INDEX.

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Ayres Gasoline Engine & Motor Works, Saginaw, Mich.—Gasoline Motors, etc.

Babcock & Wilcox Co., 85 Liberty St., New York.—Boilers, Stokers, Superheaters. *See adv. page 7.*

Backus Water Motor Co., Newark, N. J.—Gas or Gasoline Engines, Water Motors.

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Bourbon Copper & Brass Works, Cincinnait, O.—Gate Valves.
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Brownville Iron Works, Brownville, N. Y.—Centrifugal Pumps.
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Clayton Air Compressor Works, 114 Liberty St., New York.—Air Compressors, Power Pumps, etc.
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Cleveland Flue Cleaner Mfg. Co., Cleveland, O.—Boiler Tube Cleaners.
Cleveland Galvanizing Works, Cleveland, O.—Hand Pumps.
Cleveland Gear Works, Cleveland, O.—Gears.
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Cleveland Rubber Works, Cleveland, O.—Rubber Belting.
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Climax Mfg. Co., Corry, Pa.—Locomotive Engines.
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Clinton Mfg. Co., 83 Grand Ave., Brooklyn, N. Y.—Packing.
Clonbrock Steam Boiler Co., Lorraine and Court Sts., Brooklyn, N. Y.—Water Tube Boilers.
Clow, J. B., & Sons, Harrison & Franklin Sts., Chicago, Ill.—Low Water Alarms, Cast Iron Pipe.
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Collins, F. F., Mfg. Co., San Antonio, Tex.—Boilers and Engines.
Collins Iron Works, Long Island City, N. Y.—Tanks.
Collins Mfg. Co., Ltd., Conshohocken, Pa.—Regulators and Oil Filters.
Colonial Foundry & Machy. Co., Inc., South Norwalk, Conn.—Gas or Gasoline Engines.
Columbian Cordage Co., Auburn, N. Y.—Transmission Rope.
Columbiana Pump Co., Columbiana, O.—Hand, Power and Steam Pumps.
Columbus Brass Co., Columbus, O.—Globe Valves.
Columbus Machine Co., Columbus, O.—Gas or Gasoline Engines. *See adv. page 16.*
Combination Rubber & Belting Co., Bloomfield, N. J.—Gages, Packing and Belting.
Common Sense Metallic Packing Mfg. Co., 393 Pearl St., New York.—Gaskets and Packing.
Comstock & Coonse Co., Indianapolis, Ind.—Hand Pumps.
Comstock Mfg. Co., Comstock, Mich.—Boilers, Engines.
Conard, Thomas P., 119 S. 4th St., Philadelphia, Pa.—Steam Pumps.
Connersville Blower Co., Connersville, Ind.—Rotary Pumps.

ALPHABETICAL INDEX.

Conover Mfg. Co., Jersey City, N. J.—Condensers, Vacuum Pumps.

Consolidated Engine Stop Co., 100 Broadway, New York.—Automatic Engine Stops, Speed Limits, Circuit Breaker Trips, etc. *See adv. page 2.*

Consolidated Safety Valve Co., 89 Liberty St., New York.—Valves.

Continental Gin Co., Birmingham, Ala.—Boilers and Engines.

Contractor's Plant Mfg. Co., Buffalo, N. Y.—Hoisting Engines.

Cook, A. D., Lawrenceburg, Pa.—Windmill and Well Pumps.

Cook, C. Lee, Louisville, Ky.—Packing.

Cook Mfg. Co., Albion, Mich.—Gasoline Engines.

Cook Well Co., 703 Market St., St. Louis, Mo.—Power and Steam Pumps.

Cookson, T. J., 1112 Traction Bldg., Cincinnati, Ohio.—Steam Traps.

Cooper, C. & G., Co., Mt. Vernon, O.—Engines.

Co-operative Foundry, Detroit, Mich.—Grate Bars.

Corcoran, Andrew J., 11 John St., New York.—Windmill Pumps.

Corliss Gas Engine Co., 227 Folsom St., San Francisco, Cal.—Gas Engines.

Couse, Chas., & Co., 39 Dey St., New York.—Lubricators.

Covel Mfg. Co., 8-10 S. Canal St., Chicago, Ill.—Belt Fasteners.

Cox & Sons Co., Bridgeton, N. J.—Corliss Engines and Feed Water Heaters.

Cox Brass Mfg. Co., Ltd., Albany, N. Y.—Beer and Ale Pumps.

Craft, Jesse, 260 Front St., New York.—Steam and Power Pumps.

Cramp, Wm., & Sons, Ship & Engine Building Co., Beach and Ball Sts., Philadelphia, Pa.—Boilers, Engines.

Crandall Packing Co., Palmyra, N. Y.—Packing.

Crane Co., 10 N. Jefferson St., Chicago, Ill.—Pipe Fittings and Valves.

Crawford & McCrimmon Co., Brazil, Ind.—Hoisting Engines, Power Pumps.

Crawford, P. R., Heating & Mfg. Co., Cleveland, O.—Exhaust Heads.

Creamer Steam Specialties Co., 123 Liberty St., New York.—Pump Governors and Steam Traps.

Creamery Package Mfg. Co., 180 Kinzie St., Chicago, Ill.—Rotary Pumps.

Crescent Belting & Packing Co., Trenton, N. J.—Gaskets, Belting.

Crescent Mfg. Co., 96 Crescent Place, Yonkers, N. Y.—Metallic Packing.

Crescent Steel Co., Pittsburg, Pa.—Belt Fasteners.

Cresson, Geo. V., Co., Allegheny Ave., West of 17th St., Philadelphia, Pa.—Clutches, Hangers, Pulleys, etc.

Crosby Steam Gage & Valve Co., 97 Oliver St., Boston, Mass.—Water Columns, Valves, Gages, etc.

Cross, E. M., Berlin, N. H.—Centrifugal Pumps.

Cross Bros. & Co., Rochester, N. Y.—Leather Belting.

Crowell, Gilmer, 294 Graham St., Brooklyn, N. Y.—Air Compressors.

Cruse & Connaughton, 534 S. Capitol Ave., Indianapolis, Ind.—Boilers.

Cumberland Steel Co., Cumberland, Md.—Couplings, Shafting.

Curtis & Co. Mfg. Co., St. Louis, Mo.—Air Compressors.
Curtis-Hall Mfg. Co., Hartford, Conn.—Feed Water Purifiers.
Cushman Motor Co., Lincoln, Neb.—Gasoline Motors.
Daimler Mfg. Co., Long Island City, N. Y.—Marine Engines.
Dake Engine Co., Grand Haven, Mich.—High Speed and Hoisting Engines.
Dame & Townsend Co., 76 John St., New York.—Steam Traps.
Darling Pump & Mfg. Co., Williamsport, Pa.—Power and Steam Pumps.
Dart, E. M., Mfg. Co., Providence, R. I.—Pipe Couplings.
D'Auria Pumping Engine Co., Philadelphia, Pa.—Steam Pumps.
Davenport Foundry & Machine Co., Davenport, Iowa.—Engines.
Davidson, M. T., 43-53 Keap St., Brooklyn, N. Y.—Air Compressors, Steam Pumps, etc.
Davis, I. B., & Son, Hartford, Conn.—Feed Water Heaters, Pumps.
Davis, F. H., & Co., Boston, Mass.—Steam Pumps.
Davis, G. M., Regulator Co., 144 Milwaukee Ave., Chicago, Ill.—Boiler Feeders, Steam Traps, etc.
Davis-Johnson Co., 47 S. Canal St., Chicago, Ill.—Power Pumps.
Davis & Roesch Temperature Controlling Co., 136 Liberty St., New York.—Temperature Regulators.
Day-Kincaid Stoker Co., Cincinnati, O.—Stokers.
Dayton Gas Engine Co., Dayton, O.—Gas or Gasoline Engines.
Dean, H. C., Fitchburg, Mass.—Reducing Wheels.
Dean Bros. Steam Pump Works, 10th St. and Senate Ave., Indianapolis, Ind.—Air Compressors, Power and Steam Pumps.
Deane Steam Pump Co., Holyoke, Mass.—Air Compressors, Power and Steam Pumps.
Dearing Water Tube Boiler Co., Detroit, Mich.—Water Tube Boilers.
Decatur Lumber & Mfg. Co., Decatur, Ill.—Hand Pumps.
Dederick's, P. K., Sons, Albany, N. Y.—Boilers and Engines.
Delamater Iron Works, 35 Warren St., New York.—Power Pumps.
Delaney Oil & Lubricant Co., Milwaukee, Wis.—Grease Cups.
Delaney, Patrick, & Co., Colden & Renwick Sts., Newburgh, N. Y.—Marine Engines and Blow Off Tanks.
De Laval Steam Turbine Co., 74 Cortlandt St., New York.—Steam Turbines.
De La Vergne Refrigerating Machine Co., Foot of E. 138th St., New York.—Oil Engines.
Delaware Hard Fibre Co., Wilmington, Del.—Packing, Gears.
Delaware Machine Works, Wilmington, Del.—Engines.
Deming Co., Salem, O.—Power and Steam Pumps.
Dempster Mill Mfg. Co., Beatrice, Neb.—Windmill Pumps.
Dennison Electric Engine Co., New Haven, Conn.—Portable Engines.
De Rycke, Joseph, 41 Cortlandt St., New York.—Exhaust Heads, Separators, etc.
Des Moines Gas Engine & Electric Co., Des Moines, Iowa.—Gas Engines.
Desmond-Stephan Mfg. Co., Urbana, Ohio.—Injectors.

D'Este, Julian, Co., 24 Canal St., Boston, Mass.—Regulators, Steam Traps, etc.
Detroit Leather Specialty Co., Beecher and Michigan Aves., Detroit, Mich.—Packing.
Detroit Lubricator Co., Detroit, Mich.—Oil Cups, Brass Pipe Fittings, etc.
Detroit Pump Co., Detroit, Mich.—Bilge and Rotary Pumps.
Detroit Separator Co., Detroit, Mich.—Steam Separators.
Devlin, Thos., Mfg. Co., 3d St., cor. Lehigh Ave., Philadelphia, Pa.—Pipe.
Diamond Drill and Machine Co., Birdsboro, Pa.—Belt Lacing Machines, Pumps. *See adv. page 20.*
Diamond Flask & Clamp Co., Richmond, Ind.—Drop Hangers.
Diamond Iron Works, Minneapolis, Minn.—Couplings, Gears.
Diamond Rubber Co., Akron, O.—Gaskets, Packing.
Diamond Stamped Ware Co., Detroit, Mich.—Copper Floats.
Dimmick Pipe Co., Birmingham, Ala.—Cast Iron Pipe.
Direct Separator Co., Syracuse, N. Y.—Exhaust Heads, Separators, etc.
Dissinger, C. H. A., & Bro., Wrightsville, Pa.—Gas or Gasoline Engines.
Dixon, Joseph, Crucible Co., Jersey City, N. J.—Belt Dressing.
Dobbie Foundry & Machine Co., Niagara Falls, N. Y.—Boilers, Centrifugal Pumps, etc.
Doble, Abner, Co., Fremont and Howard Sts., San Francisco, Cal.—Air Compressors.
Dodge Mfg. Co., Mishawaka, Ind.—Chain Belting, Couplings, Gears, etc.
Domestic Engine Co., Hagerstown, Md.—Gas or Gasoline Engines.
Donaldson Iron Co., Emaus, Pa.—Cast Iron Pipe.
Doolittle, S. B., & Son, Binghamton, N. Y.—Boiler Tube Cleaners.
Dopp, H. Wm., & Son, Buffalo, N. Y.—Vertical Engines, Pumps.
Douglas, W. & B., Middletown, Conn.—Air Compressors, Centrifugal Pumps, etc.
Dow, Geo. E., Pumping Engine Co., 179 First St., San Francisco, Cal.—Power and Steam Pumps.
Downie Pump Co., Downieville, Pa.—Power and Steam Pumps.
Downington Mfg. Co., Ltd., East Downington. Pa.—Centrifugal Pumps.
Draper Mfg. Co., Port Huron, Mich.—Valve Reseating Machines.
Drummond, M. J., & Co., 192 Broadway, New York.—Cast Iron Pipe, Fittings, etc.
Du Bois Iron Works, Du Bois, Pa.—Gas or Gasoline Engines.
Dudgeon, Richard, 24 Columbia St., New York.—Boiler Tube Expanders.
Duluth Stoker Co., Duluth, Minn.—Stokers.
Durable Wire Rope Co., 28-30 Atlantic Ave., Boston, Mass.—Transmission Rope.
Dutton, C. H., Co., Kalamazoo, Mich.—Boilers and Engines.
Dyke, A. L., 1402 Pine St., St. Louis, Mo.—Gasoline Motors.
Eagle Bicycle Mfg. Co., Torrington, Conn.—Gas or Gasoline Engines.
Eagle Lubricator Co., 106 Canal St., Cleveland, O.—Ejectors.

Eagle Oil & Supply Co., 104 Broad St., Boston, Mass.—Packing, Belt Dressing, etc.
Earle Gear & Machine Co., Oxford and Mascher Sts., Philadelphia, Pa.—Gears.
East End Boiler Works, 19 St. Aubin Ave., Detroit, Mich.—Water Tube Boilers.
East Jersey Pipe Co., 71 Broadway, New York.—Riveted Pipe.
Eastern Machinery Co., New Haven, Conn.—Clutches, Couplings, etc.
Eastwood, Benj., Co., Paterson, N. J.—Hangers, Pulleys, etc.
Eastwood Wire Mfg. Co., Belleville, N. J.—Valves, Whistles.
Eaton, Cole & Burnham Co., 253 Broadway, New York.—Gages, Valves, etc.
Eclipse Governor Co., Vicksburg, Mich.—Governors.
Eddy Valve Co., Waterford, N. Y.—Gate Valves.
Edge Moor Iron Co., Wilmington, Del.—Water Tube Boilers and Locomotive Engines.
Edson Mfg. Co., 132 Commercial St., Boston, Mass.—Hand, Power, and Steam Pumps.
Edwards, Joseph, & Co., 412 Water St., New York.—Engines, Centrifugal, and Steam Pumps.
Egdir Supply & Equipment Co., Carbondale, Pa.—Oil Separators.
Ehrsam, J. B., & Sons, Mfg. Co., Enterprise, Kans.—Water Tube Boilers, and Hand Pumps.
Electric Boiler Co., Rochester, N. Y.—House Heating Boilers.
Electric Heat Regulator Co., Minneapolis, Minn.—Regulators.
Elektron Mfg. Co., Springfield, Mass.—Pump Governors.
Elgin Mfg. Co., Elgin, Ill.—Power Pumps.
Ellington Mfg. Co., Quincy, Ill.—Gas or Gasoline Engines.
Ellingworth & Lance, Utica, N. Y.—Gas or Gasoline Engines.
Elliott, George E., Calais, Me.—Steam Pumps.
Elmes, Charles F., Engineering Works, 253 Fulton St., Chicago, Ill.—Power Pumps.
Elmore Mfg. Co., Clyde, O.—Gasoline Motors.
Elyria Gas Engine Co., Elyria, O.—Gas Engines.
Emerson Steam Pump Co., Alexandria, Va.—Steam Pumps.
Empire Engine & Motor Co., Orangeburg, N. Y.—Pneumatic Motors.
Empire Mfg. Co., Lockport, N. Y.—Canvas Belting.
Empire Rubber Mfg. Co., Trenton, N. J.—Packing and Belting.
Enterprise Mfg. Co., Columbiana, O.—Portable Engines.
Epping-Carpenter Co., 2410 Penn Ave., Pittsburg, Pa.—Steam Pumps.
Erie City Iron Works, Erie, Pa.—Boilers and Engines.
Erie Engine Works, Erie, Pa.—Boilers and Engines.
Erie Machine Shops, Erie, Pa.—Feed Water Filters, etc.
Erie Mfg. & Supply Co., Erie, Pa.—Engines, Injectors, etc.
Erie Pump & Engine Co., Erie, Pa.—Engines, Centrifugal, and Steam Pumps.
Erwin & Co., 35 No. Canal St., Chicago, Ill.—Regulators, Power and Steam Pumps.
Eureka Bark Mill Co., Lancaster, Pa.—Centrifugal Pumps.
Eureka Iron Co., 14 No. Canal St., Chicago, Ill.—Steam Traps.
Evans Friction Cone Co., 85 Water St., Boston, Mass.—Speed Transmission Devices.
Evansville Leather Belting Co., Evansville, Ind.—Leather Belting.

Gibbs Engineering & Mfg. Co., Glendale, L. I., N. Y.—Tractor Trucks and Trains.
Giblin & Co., 105 Broad St., Utica, N. Y.—House Heating Boilers.
Gilbert & Barker Mfg. Co., Springfield, Mass.—Steam Pumps.
Gill, J. H., Raleigh, N. C.—Grate Bars.
Gill, John L., Jr., 204 So. 3d St., Philadelphia, Pa.—Water Tube Boilers.
Gillespie, T. A., Co., Pittsburg, Pa.—Steel Pipe.
Gilmer, L. H., & Co., 3952 Market St., Philadelphia, Pa.—Belting and Belt Hooks.
Gilmour, Robert M., Mfg. Co., 105 John St., New York.—Packing.
Glanding, James Co., 1907 No. 6th St., Philadelphia, Pa.—Packing.
Gleason-Peters Air Pump Co., 20 W. Houston St., New York.—Power Pumps.
Gleason Works, Rochester, N. Y.—Gears.
Globe Brass Works, Detroit, Mich.—Boiler Tube Cleaners, Gages, etc.
Globe Iron Works Co., Minneapolis, Minn.—Gas or Gasoline Engines.
Globe Supply Co., Cincinnati, O.—Packing.
Glover Machine Works, Marietta, Ga.—Hoisting Engines.
Goldens Foundry & Machine Co., Columbus, Ga.—Couplings, Hangers, Pulleys, etc.
Good Gas Engine Co., Dayton, O.—Gas Engines.
Goodnow, L. H. Foundry Co., Fitchburg, Mass.—Fly Wheels.
Goodrich, B. F., Co., Akron, O.—Belting, Packing.
Goodsell Packing Co., 33 So. Canal St., Chicago, Ill.—Packing.
Goodyear Rubber Co., 787 Broadway, New York.—Packing, Belting.
Goodyear Rubber Hose & Packing Co., 221 Chestnut St., Philadelphia, Pa.—Belt Dressing.
Gordon Hollow Blast Grate Co., Greenville, Mich.—Grate Bars, Furnace Grates.
Gorton & Lidgerwood Co., 96 Liberty St., New York.—House Heating Boilers.
Goubert Mfg. Co., 85 Liberty St., New York.—Feed Water Heaters, Steam Separators.
Gould Packing Co., East Cambridge, Mass.—Packing.
Goulds Mfg. Co., Seneca Falls, N. Y.—Air Compressors, Pumps. *See adv. page 13.*
Grand Rapids Gas Engine & Yacht Co., Grand Rapids, Mich.—Marine Engines.
Grant Gear Works, 6 Portland St., Boston, Mass.—Gears.
Grant Iron Works, Mahanoy City, Pa.—Air Compressors, Pumps.
Graphite Lubricating Co., Bound Brook, N. J.—Bushings.
Graton & Knight Mfg. Co., Worcester, Mass.—Leather Belting.
Graves, W. D., Browns Valley, Minn.—Oilers.
Gray & Prior Machine Co., Hartford, Conn.—Gas or Gasoline Engines.
Great Lakes Engineering Works, Detroit, Mich.—Scotch Boilers, Engines.
Great Western Mfg. Co., Leavenworth, Kan.—Pumps.
Green Fuel Economizer Co., Matteawan, N. Y.—Fuel Economizers.

Greene, Tweed & Co., 17 Murray St., New York.—Packing, etc.
Greenwald, I. & E., Co., 720 E. Pearl St., Cincinnati, O.—Engines, Gears, Shafting, etc. *See adv. page 4.*
Griffing, A. A., Iron Co., 449 Communipaw Av., Jersey City, N. J.—Water Columns, Exhaust Heads, etc.
Griffith & Wedge Co., Zanesville, O.—Corliss and Hoisting Engines.
Griffiths, Jas. A., 500 No. 12th St., Philadelphia, Pa.—Boiler Tube Cleaners, Ejectors, etc.
Grote Mfg. Co., Evansville, Ind.—Flue Welders.
Grundy Brass Works, 90 Sudbury St., Boston, Mass.—Brass Pipe Fittings.
Guild & Garrison, 457 Kent Ave., Brooklyn, N. Y.—Air Compressors, Pumps.
Guillott Metal Gasket Co., 84 Market St., Chicago, Ill.—Gaskets, Steam Engine Governors.
Gurney Heater Mfg. Co., 74 Franklin St., Boston, Mass.—House Heating Boilers.
Gutta Percha & Rubber Mfg. Co., 126 Duane St., New York.—Gaskets, Packing, Belting.
Haberkorn Engine Co., Fort Wayne, Ind.—High Speed Engines.
Haines, W. S., Co., 136 So. 4th St., Philadelphia, Pa.—Oil Filters, Regulators, etc.
Hall, C. F., & Son, Syracuse, N. Y.—Valve Reseating Machines, Valves.
Hall Steam Pump Co., Allegheny, Pa.—Steam Pumps.
Hamilton Rubber Mfg. Co., Trenton, N. J.—Packing, etc.
Hamlin & Emery Brass Co., 26 Island St., Boston, Mass.—Pipe Fittings.
Hammond Iron Works, Warren, Pa.—Boilers, Condensers, etc.
Hancock Inspirator Co., 89 Liberty St., New York.—Ejectors, Boiler Feeders, etc.
Handy Trap Co., Philadelphia, Pa.—Steam Traps.
Harder Mfg. Co., Cobleskill, N. Y.—Portable Engines.
Hardie-Tynes Foundry & Machine Co., Birmingham, Ala.—Engines and Air Compressors.
Harmon Machine Co., Watertown, N. Y.—Paper Mill Pumps.
Harper & Slack Co., Chester, Pa.—Metallic Packing.
Harris, Geo. P., & Bro., 62 W. Lake St., Chicago, Ill.—Float Valves.
Harris, Wm. A. Steam Engine Co., Providence, R. I.—Engines, Power and Steam Pumps.
Harrisburg Foundry & Machine Works, Harrisburg, Pa.—Boilers and Engines. *See adv. page 17.*
Harrisburg Mfg. & Boiler Co., Harrisburg, Pa.—Boilers, Power and Steam Pumps.
Harrisburg Pipe & Pipe Bending Co., Harrisburg, Pa.—Pipe
Harrison Machine Works, Belleville, Ill.—Engines.
Harrison Safety Boiler Works, 17th & Clearfield Sts., Philadelphia, Pa.—Separators, Feed Water Heaters and Filters.
Hart-Parr Co., Charles City, Iowa.—Gasoline Engines.
Hartman Hide & Leather Co., St. Louis, Mo.—Belt Fasteners.
Hawley Down Draft Furnace Co., 59 Townsend St., Chicago, Ill.—Boilers, Feed Water Heaters, etc.
Hayden & Derby Mfg. Co., 89 Liberty St., New York.—Injectors, Feed Water Filters, Bilge Pumps.
Haydenville Co., Haydenville, Mass.—Gages, Valves, Power and Test Pumps.

Hayes, Harrison, Portland, Me.—Tube Expanders.
Hayes Pump & Planter Co., Galva, Ill.—Power, Steam, and Windmill Pumps.
Hazelton Boiler Co., Rutherford, N. J.—Water Tube Boilers.
Heilman Machine Works, Evansville, Ind.—Boilers and Engines.
Heine Safety Boiler Co., 704 Commonwealth Trust Bldg., St. Louis, Mo.—Water Tube Boilers.
Heisler Pumping Engine Co., Erie, Pa.—Pumping Engines.
Helios-Upton Co., Peabody, Mass.—Gages, Steam Traps.
Heller, Aller & Co., Napoleon, O.—Windmill Pumps.
Helwig Mfg. Co., St. Paul, Minn.—Pneumatic Motors.
Hench & Dromgold Co., York, Pa.—Engines.
Hendee Wire Brush Co., Milwaukee, Wis.—Belt Dressing.
Henderer's, A. L., Sons, Wilmington, Del.—Tube Expanders, Test Pumps.
Hendrick Mfg. Co., Ltd., Carbondale, Pa.—Power Pumps.
Hendrie & Bolthoff Mfg. & Supply Co., Denver, Col.—Corliss Engines.
Hendy, Joshua, Machine Works, San Francisco, Cal.—Hoisting Engines.
Hennebohle, Frank, South Chicago Ave. & Erie St., Chicago, Ill.—Safety Valves.
Herbertson's, J., Sons, Cadwallader, Pa.—Engines.
Hercules Float Works, Springfield, Mass.—Copper Floats.
Hercules Gas Engine Works, San Francisco, Cal.—Gas Engines.
Herendeen Mfg. Co., Geneva, N. Y.—House Heating Boilers.
Hermance Valve Co., Syracuse, N. Y.—Valves.
Herreshoff Mfg. Co., Bristol, R. I.—Marine Engines.
Herron & Bury Mfg. Co., Erie, Pa.—Air Compressors.
Hersey Mfg. Co., South Boston, Mass.—Power Pumps.
Hess-Snyder Co., Massillon, O.—Couplings, Hangers, etc., and Hand Pumps.
Hetherington & Berner, Indianapolis, Ind.—Grate Bars.
Hewes & Phillips Iron Works, Newark, N. J.—Boilers and Engines.
Hicks, E. G., Gasoline Engine Co., Minneapolis, Minn.—Gasoline Engines.
Hide Leather & Belting Co., Indianapolis, Ind.—Leather Belting.
Hileman-James Co., McKeesport, Pa.—Metallic Packing.
Hill, William E., & Co., Kalamazoo, Mich.—Power Pumps.
Hill Clutch Co., Cleveland, O.—Couplings, Gears, Clutches, etc.
Hill Machine Co., Anderson, Ind.—Pumps.
Hills-McCanna Co., 128 E. Kinzie St., Chicago, Ill.—Low Water Alarms, Gages, etc.
Hinds, Thos., Malone, N. Y.—Gears, Pulleys, Shafting.
Hodgson, E. A., Laconia, N. H.—Friction Couplings.
Hoes, Robert, Malden Bridge, N. Y.—Hand Pumps.
Hoffman & Billing Mfg. Co., Milwaukee, Wis.—Brass Pipe Fittings, Valves, etc.
Hoffmann, B., Mfg. Co., Milwaukee, Wis.—Pipe Fittings, Valves, etc.
Hogg, George A., Iron & Steel Fdy. Co., Pittsburg, Pa.—Corliss Engines.
Hohmann & Maurer Mfg. Co., Rochester, N. Y.—Gages.
Hoile Mfg. Co., Buffalo, N. Y.—Hand Pumps.
Holland, Wm., 56 So. Canal St., Chicago, Ill.—Grease Cups.

Holly Mfg. Co., Lockport, N. Y.—Power Pumps.
Holmes Metallic Packing Co., Wilkesbarre, Pa.—Packing.
Holt Mfg. Co., Stockton, Cal.—Traction Engines.
Holyoke Belting Co., Holyoke, Mass.—Leather Belting.
Holyoke Machine Co., Holyoke, Mass.—Power Pumps.
Holyoke Steam Boiler Works, Holyoke, Mass.—Boilers, Grate Bars, etc.
Homan, J. & E., 378 West Broadway, New York.—Gas or Gasoline Engines.
Home Rubber Co., Trenton, N. J.—Gaskets, Packing, etc.
Homer Brass Works, 2311 Race St., Philadelphia, Pa.—Gage Cocks.
Homestead Valve Mfg. Co., Pittsburg, Pa.—Valves.
Hooker Steam Pump Co., St. Louis, Mo.—Feed Water Heaters, Pumps.
Hooven, Owens & Rentschler Co., Hamilton, O.—Compound, Corliss and Turbine Engines.
Hopkins Machine Works, Bridgeton, R. I.—Clutches, Pulleys.
Hoppen, J. E., Belleville, N. J.—Hangers.
Hoppes Mfg. Co., Springfield, O.—Feed Water Heaters and Filters, etc.
Hopson & Chapin Mfg. Co., New London, Conn.—House Heating Boilers.
Horsburgh & Scott, Cleveland, O.—Gears.
Houghton, E. F., & Co., 240 W. Somerset St., Philadelphia, Pa. Steam Traps.
Household Pump Co., 1237 Arch St., Philadelphia, Pa.—Power Pumps.
Houston, Stanwood & Gamble Co., Cincinnati, O.—Boilers, Engines.
Howard Iron Works, Buffalo, N. Y.—Countershafts, Couplings.
Howard & Jennings, Syracuse, N. Y.—Hand Pumps.
Howard Thermostat Co., Oswego, N. Y.—Temperature Regulators.
Howell, R. R., & Co., Minneapolis, Minn.—Boilers, Centrifugal Pumps, etc.
Hoyt Metal Co., St. Louis, Mo.—Packing.
Hubbard's, Norman Sons, 265 Water St., Brooklyn, N. Y.—Steam Pumps.
Huber Mfg. Co., Marion, O.—Boilers, Engines.
Hudson Belting Co., Worcester, Mass.—Leather Belting.
Hull, Camp Co., 127 Worth St., New York.—House Heating Boilers.
Humphrey Machine Co., Keene, N. H.—Shafting, Power, and Rotary Pumps.
Humphryes' Mfg. Co., Mansfield, O.—Power Pumps.
Hunt, C. W., Co., 45 Broadway, New York—Hoisting Engines.
Hunt, Henry C., Co., 32 Oliver St., Boston, Mass.—Leather Belting.
Hunt, Rodney, Machine Co., Orange, Mass.—Couplings, Gears, etc., Power Pumps.
Hunter, Jas., Machine Co., North Adams, Mass.—Bearings, Countershafts, Hangers, etc.
Hurlbut, W. M., Winona, Minn.—Portable Engines.
Hurst, H. L., Mfg. & Supply Co., Canton, O.—Hand Pumps.
Hyde Bros., & Co., Lewis Bldg., Pittsburg, Pa.—Water Tube Boilers.
Hydraulic Press Mfg. Co., Mt. Gilead, O.—Gas or Gasoline Engines, Pumps.

Hydro-Pneumatic Pump Co., 101 Walker St., New York.—Beer and Ale Pumps.
I. X. L. & Goshen Pump Co., Goshen, Ind.—Hand and Power Pumps.
Ide, A. L., & Sons, Springfield, Ill.—Engines, Steam Separators.
Illinois Malleable Iron Co., 32 W. Monroe St., Chicago, Ill.—Water Columns, Pipe Fittings, Pumps, etc.
Imperial Engine Co., Painted Post, N. Y.—High Speed Engines, Air Compressors.
Imperial Leather Preserver Mfg. Co., 212 So. 3d St., Philadelphia, Pa.—Belt Dressing.
Ingalls & Kendrickson, 80 Sudbury St., Boston, Mass.—House Heating Boilers.
Ingersoll-Sergeant Drill Co., 26 Cortlandt St., New York.—Air Compressors, Centrifugal Pumps.
International Boiler Works Co., East Stroudsburg, Pa.—Boilers, Vertical Engines.
International Heater Co., Utica, N. Y.—House Heating Boilers.
International Motor Co., St. Louis, Mo.—Gas or Gasoline Engines.
International Power Vehicle Co., Stamford, Conn.—Oil Engines.
International Steam Engineering Co., Atlanta, Ga.—Condensers and Cooling Towers.
International Stoker Co., Jersey City, N. J.—Mechanical Stokers.
Ireson, Chas. L., 148 High St., Boston, Mass.—Packing, Belting, etc.
Iron Sanitary Mfg. Co., 52 Dearborn St., Chicago, Ill.—Pipe Fittings.
Ironton Engine Co., Ironton, O.—High Speed Engines.
Jackson, Byron, San Francisco, Cal.—Boilers, Engines, Pumps.
Jackson Flue Scraper Co., Jackson, Mich.—Flue Cleaners.
Jacobs, Chas. M., Cordage Co., Cincinnati, O.—Packing.
Jacobson Machine Mfg. Co., Warren, Pa.—Gas or Gasoline Engines.
James & Foote, 58 So. Canal St., Chicago, Ill.—Gears.
Jamieson, M. W., & Co., Warren, Pa.—Gasoline Engines,
Jarecki Mfg. Co., Erie, Pa.—Water Columns, Valves, etc.
Jarvis Engine & Machine Co., Lansing, Mich.—Safety Water Columns.
Jeanesville Iron Works Co., Jeanesville, Pa.—Condensers, Power Pumps.
Jefferson Mfg. Co., Lexington, Mass.—Pipe Fittings.
Jeffrey Mfg. Co., Columbus, O.—Couplings, Gears, Hangers, etc.
Jenkins Bros., 71 John St., New York.—Packing, Valves, etc.
Jerome & Elliott, 37 So. Canal St., Chicago, Ill.—Metallic Packing.
Jewell Belting Co., Hartford, Conn.—Belting, Belt Dressing.
Johns, H. W.-Manville Co., 100 William St., New York.—Gaskets, Packing.
Johnson, Carlyle, Machine Co., Hartford, Conn.—Friction Clutches.
Johnson, Henry, & Co., Gates Ave. & Blvd., Jersey City, N. J.—Packing.
Johnson, Isaac G., & Co., Spuyten Duyvil, N. Y.—Pipe Fittings.
Johnson Service Co., Milwaukee, Wis.—Air Compressors.
Johnson Temperature Regulating Co., 240 4th Ave., New York.—Pressure Regulators.

Jones, E. D., & Sons Co., Pittsfield, Mass.—Couplings, Hangers, Pumps.
Jones & Laughlin Steel Co., Pittsburg, Pa.—Couplings, Pulleys, Hangers, etc.
Jones, W. A., Foundry & Machine Co., 142 W. North Ave., Chicago, Ill.—Shafting.
Judson Governor Co., Rochester, N. Y.—Steam Engine Governors.
June, D., & Co., Fremont, O.—Boilers, Traction Engines.
Kaestner, Chas. G., Co., 241 So. Jefferson St., Chicago, Ill.—Boilers, Engines.
Kansas City Hay Press Co., Kansas City, Mo.—Centrifugal and Power Pumps.
Katzenstein, L., & Co., 358 West St., New York.—Packing.
Keasey Pulley Co., Toledo, O.—Pulleys.
Keck, Gonnermann Co., Mt. Vernon, Ind.—Boilers and Traction Engines.
Keeler, E., Co., Williamsport, Pa.—Boilers, etc.
Kehoe, Wm., & Sons, Savannah, Ga.—Marine Engines, Pumps.
Kelley, Benj. F., & Son, 91 Liberty St., New York.—Exhaust Heads, Pumps. *See adv. page 14.*
Kelley Bros. & Spielman, Swanson cor. Moore Sts., Philadelphia, Pa.—Belt Fasteners.
Kellogg Bros., Jacksonville, Ill.—Blow Off Tanks.
Kellogg-Mackey-Cameron Co., Lake & Franklin Sts., Chicago, Ill.—House Heating Boilers.
Kelly, O. S., Co., Springfield, O.—Traction Engines.
Kelly, O. S., Western Mfg. Co., Iowa City, Ia.—Gas or Gasoline Engines.
Kelly & Jones Co., Greensburg, Pa.—Water Columns, Pipe Fittings, etc.
Kelly Foundry & Machine Co., Goshen, Ind.—Grate Bars, Couplings, Hangers, etc.
Kelton-Bruce Mfg. Co., 9-13 Franklin St., Salem, Mass.—Rawhide Belting.
Kendall, Edw., & Sons, Cambridgeport, Mass.—Boilers, Hoisting Engines.
Kennedy Valve Mfg. Co., 57 Beekman St., New York.—Valves.
Kenney & Co., Scottdale, Pa.—Boilers, Engines.
Kensington Engine Works, Ltd., 245 No. Broad St., Philadelphia, Pa.—Boilers, Engines, Pumps.
Keuffel & Esser Co., 127 Fulton St., New York.—Planimeters.
Keystone Boiler & Radiator Co., Huntington, Pa.—House Heating Boilers.
Keystone Brass Co., Erie, Pa.—Oil Cups, Valves.
Keystone Engine & Machine Works, 5th & Buttonwood Sts., Philadelphia, Pa.—Exhaust Heads, Power Pumps.
Keystone Gas Engine Co., New Brighton, Pa.—Gas or Gasoline Engines.
Keystone Lubricating Co., 20th St., cor. Allegheny Ave., Philadelphia, Pa.—Belt Dressing.
Kieley & Mueller, 34 W. 13th St., New York.—Regulators, Steam Traps, etc.
Kilburn, Lincoln, & Co., Fall River, Mass.—Hangers, Pulleys.
King, Chas. B., Co., Detroit, Mich.—Gas or Gasoline Engines.
King, Quick & Gerber, Paterson, N. J.—Gasoline Motors.
Kingsford Foundry & Machine Works, Oswego, N. Y.—Boilers, Engines, Pumps.

Hydro-Pneumatic Pump Co., 101 Walker St., New York.—Beer and Ale Pumps.
I. X. L. & Goshen Pump Co., Goshen, Ind.—Hand and Power Pumps.
Ide, A. L., & Sons, Springfield, Ill.—Engines, Steam Separators.
Illinois Malleable Iron Co., 32 W. Monroe St., Chicago, Ill.—Water Columns, Pipe Fittings, Pumps, etc.
Imperial Engine Co., Painted Post, N. Y.—High Speed Engines, Air Compressors.
Imperial Leather Preserver Mfg. Co., 212 So. 3d St., Philadelphia, Pa.—Belt Dressing.
Ingalls & Kendrickson, 80 Sudbury St., Boston, Mass.—House Heating Boilers.
Ingersoll-Sergeant Drill Co., 26 Cortlandt St., New York.—Air Compressors, Centrifugal Pumps.
International Boiler Works Co., East Stroudsburg, Pa.—Boilers, Vertical Engines.
International Heater Co., Utica, N. Y.—House Heating Boilers.
International Motor Co., St. Louis, Mo.—Gas or Gasoline Engines.
International Power Vehicle Co., Stamford, Conn.—Oil Engines.
International Steam Engineering Co., Atlanta, Ga.—Condensers and Cooling Towers.
International Stoker Co., Jersey City, N. J.—Mechanical Stokers.
Ireson, Chas. L., 148 High St., Boston, Mass.—Packing, Belting, etc.
Iron Sanitary Mfg. Co., 52 Dearborn St., Chicago, Ill.—Pipe Fittings.
Ironton Engine Co., Ironton, O.—High Speed Engines.
Jackson, Byron, San Francisco, Cal.—Boilers, Engines, Pumps.
Jackson Flue Scraper Co., Jackson, Mich.—Flue Cleaners.
Jacobs, Chas. M., Cordage Co., Cincinnati, O.—Packing.
Jacobson Machine Mfg. Co., Warren, Pa.—Gas or Gasoline Engines.
James & Foote, 58 So. Canal St., Chicago, Ill.—Gears.
Jamieson, M. W., & Co., Warren, Pa.—Gasoline Engines,
Jarecki Mfg. Co., Erie, Pa.—Water Columns, Valves, etc.
Jarvis Engine & Machine Co., Lansing, Mich.—Safety Water Columns.
Jeanesville Iron Works Co., Jeanesville, Pa.—Condensers, Power Pumps.
Jefferson Mfg. Co., Lexington, Mass.—Pipe Fittings.
Jeffrey Mfg. Co., Columbus, O.—Couplings, Gears, Hangers, etc.
Jenkins Bros., 71 John St., New York.—Packing, Valves, etc.
Jerome & Elliott, 37 So. Canal St., Chicago, Ill.—Metallic Packing.
Jewell Belting Co., Hartford, Conn.—Belting, Belt Dressing.
Johns, H. W.-Manville Co., 100 William St., New York.—Gaskets, Packing.
Johnson, Carlyle, Machine Co., Hartford, Conn.—Friction Clutches.
Johnson, Henry, & Co., Gates Ave. & Blvd., Jersey City, N. J.—Packing.
Johnson, Isaac G., & Co., Spuyten Duyvil, N. Y.—Pipe Fittings.
Johnson Service Co., Milwaukee, Wis.—Air Compressors.
Johnson Temperature Regulating Co., 240 4th Ave., New York. Pressure Regulators.

Jones, E. D., & Sons Co., Pittsfield, Mass.—Couplings, Hangers, Pumps.
Jones & Laughlin Steel Co., Pittsburg, Pa.—Couplings, Pulleys, Hangers, etc.
Jones, W. A., Foundry & Machine Co., 142 W. North Ave., Chicago, Ill.—Shafting.
Judson Governor Co., Rochester, N. Y.—Steam Engine Governors.
June, D., & Co., Fremont, O.—Boilers, Traction Engines.
Kaestner, Chas. G., Co., 241 So. Jefferson St., Chicago, Ill.—Boilers, Engines.
Kansas City Hay Press Co., Kansas City, Mo.—Centrifugal and Power Pumps.
Katzenstein, L., & Co., 358 West St., New York.—Packing.
Keasey Pulley Co., Toledo, O.—Pulleys.
Keck, Gonnermann Co., Mt. Vernon, Ind.—Boilers and Traction Engines.
Keeler, E., Co., Williamsport, Pa.—Boilers, etc.
Kehoe, Wm., & Sons, Savannah, Ga.—Marine Engines, Pumps.
Kelley, Benj. F., & Son, 91 Liberty St., New York.—Exhaust Heads, Pumps. *See adv. page 14.*
Kelley Bros. & Spielman, Swanson cor. Moore Sts., Philadelphia, Pa.—Belt Fasteners.
Kellogg Bros., Jacksonville, Ill.—Blow Off Tanks.
Kellogg-Mackey-Cameron Co., Lake & Franklin Sts., Chicago, Ill.—House Heating Boilers.
Kelly, O. S., Co., Springfield, O.—Traction Engines.
Kelly, O. S., Western Mfg. Co., Iowa City, Ia.—Gas or Gasoline Engines.
Kelly & Jones Co., Greensburg, Pa.—Water Columns, Pipe Fittings, etc.
Kelly Foundry & Machine Co., Goshen, Ind.—Grate Bars, Couplings, Hangers, etc.
Kelton-Bruce Mfg. Co., 9-13 Franklin St., Salem, Mass.—Rawhide Belting.
Kendall, Edw., & Sons, Cambridgeport, Mass.—Boilers, Hoisting Engines.
Kennedy Valve Mfg. Co., 57 Beekman St., New York.—Valves.
Kenney & Co., Scottdale, Pa.—Boilers, Engines.
Kensington Engine Works, Ltd., 245 No. Broad St., Philadelphia, Pa.—Boilers, Engines, Pumps.
Keuffel & Esser Co., 127 Fulton St., New York.—Planimeters.
Keystone Boiler & Radiator Co., Huntington, Pa.—House Heating Boilers.
Keystone Brass Co., Erie, Pa.—Oil Cups, Valves.
Keystone Engine & Machine Works, 5th & Buttonwood Sts., Philadelphia, Pa.—Exhaust Heads, Power Pumps.
Keystone Gas Engine Co., New Brighton, Pa.—Gas or Gasoline Engines.
Keystone Lubricating Co., 20th St., cor. Allegheny Ave., Philadelphia, Pa.—Belt Dressing.
Kieley & Mueller, 34 W. 13th St., New York.—Regulators, Steam Traps, etc.
Kilburn, Lincoln, & Co., Fall River, Mass.—Hangers, Pulleys.
King, Chas. B., Co., Detroit, Mich.—Gas or Gasoline Engines.
King, Quick & Gerber, Paterson, N. J.—Gasoline Motors.
Kingsford Foundry & Machine Works, Oswego, N. Y.—Boilers, Engines, Pumps.

Kingsland Mfg. Co., St. Louis, Mo.—Traction Engines.
Kinsey & Mahler Co., Peoria, Ill.—Brass Fittings.
Kinsley Mfg. Co., Bridgeport, Conn.—Whistles.
Kitts Mfg. Co., Oswego, N. Y.—Water Columns, Pump Governors, etc.
Klein, Chas. C., Marshall & Cambria Sts., Philadelphia, Pa.—Couplings, Hangers, Pulleys, etc.
Kling Bros., 287 Hawthorne Ave., Chicago, Ill.—Boilers, Gas or Gasoline Engines.
Klipfel & Thomas Co., 74 W. Lake St., Chicago, Ill.—Regulators, Steam Traps, etc.
Knapp Mfg. Co., 24 Frankfort St., New York.—Air Compressors, Hand, etc., Pumps.
Knowles Steam Pump Works, 114 Liberty St., New York.—Power and Steam Pumps.
Knowlton & Kelly, Troy, N. Y.—Engines, Power and Steam Pumps.
Knowlton, G. W., Rubber Co., 29 Broad St., Boston, Mass.—Packing, etc.
Krogh Mfg. Co., San Francisco, Cal.—Engines, Centrifugal Pumps.
Kroschell Bros. Co., 59 E. Erie St., Chicago, Ill.—Boilers and Feed Water Heaters.
Kuhns Bros., Dayton, O.—Pipe Fittings.
Kumberger & Vreeland, 33 Sullivan St., New York.—Gas or Gasoline Engines, Gears, etc.
Kuhkle, E. B., & Co., Fort Wayne, Ind.—Safety Valves.
Kutztown Foundry & Machine Co., Kutztown, Pa.—Grate Bars.
Lackawanna Pump Works, Scranton, Pa.—Power Pumps.
La Favorite Rubber Mfg. Co., Hawthorne, N. J.—Packing, etc.
La France Fire Engine Co., Elmira, N. Y.—Power Pumps.
Lagonda Mfg. Co., Springfield, O.—Boiler Tube Cleaners.
Lahman, W. H., 59 E. Indiana St., Chicago, Ill.—Grate Bars, Grates.
Laidlaw-Dunn-Gordon Co., 114 Liberty St., New York.—Air Compressors, Power Pumps.
Lake City Engineering Co., Erie, Pa.—Marine Engines, Pumps.
Lake Shore Rubber Co., Erie, Pa.—Packing, etc.
Lambert Gas & Gasoline Engine Co., Anderson, Ind.—Gas or Gasoline Engines.
Lambert Hoisting Engine Co., Newark, N. J.—Hoisting Engines, Air Compressors.
Lammert & Mann, 153 So. Jefferson St., Chicago, Ill.—Gas and Gasoline Engines.
Lance, Geo. A., Watertown, N. Y.—Centrifugal Pumps.
Lane & Bodley Co., Cincinnati, O.—Engines, Pumps.
Lang, John B., Ithaca, N. Y.—Boilers, Traction Engines.
Lang & Goodhue Mfg. Co., Burlington, Vt.—Steam Pumps.
Lang, J., Electric Co., 176 E. Indiana St., Chicago, Ill.—Water Gages.
Lang's, Jonn S., Son & Co., 4 Fletcher St., New York.—Syphon Pumps.
Lansing Boiler & Engine Works, Lansing, Mich.—Boilers, Portable Engines.
Lansing Motor & Pump Co., Lansing, Mich.—Gasoline Motors, Windmill Pumps.
Larzelere Machine Co., Williamsport, Pa.—Boilers, Engines, Power Pumps.

Lawler Water Feed & Damper Regulator Co., 181 Mercer St., New York.—Feed Water Heaters, Regulators, etc.
Lawrence Cordage Works, 46 South St., New York.—Packing.
Lawrence Machine Co., Lawrence, Mass.—Power Pumps.
Lazier Gas Engine Co., Buffalo, N. Y.—Gas or Gasoline Engines.
Learmonth, Robert, 100 White Bldg., Buffalo, N. Y.—Feed Water Heaters and Purifiers. *See adv. page 16.*
Leather Preserver Mfg. Corporation, 31 Monroe St., Chicago, Ill.—Belt Dressing.
Leavitt Machine Co., Orange, Mass.—Valve Reseating Machines.
Lee & Hoff Mfg. Co., St. Paul, Minn.—Tube Expanders.
Lee Mfg. Co., Port Huron, Mich.—Injectors, Ejectors, Boiler Feeders.
Lee, Thomas, Cincinnati, O.—Exhaust Heads.
Leffel, Jas., & Co., Springfield, O.—Boilers, Engines, Pumps.
Lehigh Foundry Co., Fullerton, Pa.—Fly Wheels.
Lehigh Valley Brass Works, South Bethlehem, Pa.—Gage Cocks.
Leland & Faulconer, 480 Trombly Av., Detroit, Mich.—Gasoline Motors.
Leschen, A., & Sons Rope Co., St. Louis, Mo.—Packing, Transmission Rope.
Libby Mfg. Co., 147 Varick St., New York.—Packing, Valves.
Liberty Mfg. Co., Pittsburg, Pa.—Boiler Tube Cleaners.
Liddell Co., Charlotte, N. C.—Boilers, Engines, Couplings.
Lidgerwood Mfg. Co., 96 Liberty St., New York.—Boilers, Engines.
Lima Locomotive & Machine Co., Lima, O.—Locomotive Engines.
Lindgren, Mahan, Fire Apparatus Works, 793 W. Lake St., Chicago, Ill.—Power and Steam Pumps.
Link Belt Engineering Co., Nicetown, Philadelphia, Pa.—Couplings, Hangers, Pulleys, etc.
Link-Belt Machinery Co., 39th St. & Stewart Ave., Chicago, Ill.—Water Tube Boilers, Steam Specialties.
Link, E. M., Machinery Co., Erie, Pa.—Boilers, Engines.
Lippincott, A. C., Scranton, Pa.—Steam Engine Indicators.
Liquid Carbonic Co., Michigan & Wells Sts., Chicago. Ill.—Beer and Ale Pumps.
Litchfield Foundry & Machine Works, Litchfield, Ill.—Hoisting Engines.
Locke Regulator Co., Salem, Mass.—Pump Governors, Regulators, etc.
Locke Steel Belt Co., Bridgeport, Conn.—Chain Belting.
Lombard Governor Co., 36 Whittier St., Boston, Mass.—Pump Governors, Grate Bars, etc.
Lombard Iron Works & Supply Co., Augusta, Ga.—Boilers.
Lonergan, J. E., & Co., 211 Race St., Philadelphia, Pa.—Water Columns, Steam Traps, etc.
Loomis, Frank W., 403 Canal St., New York.—Gas or Gasoline Engines.
Lovegrove & Co., 143 No. 3d St., Philadelphia, Pa.—Steam Pumps.
Lowell Model Co., Chelmsford, Mass.—Gas or Gasoline Engines.
Lozier Motor Co., 1 Broadway, New York.—Gasoline Motors.
Lubron Mfg. Co., 38 India St., Boston, Mass.—Packing.

Lucas, C. O., & Co., Greenville, O.—Boilers, Power Pumps.
Ludlow Valve Mfg. Co., Troy, N. Y.—Valves.
Lunkenheimer Co., Cincinnati, Ohio.—Valves, Lubricators, etc. *See adv. page 22.*
Lyman, W. C., 49 Michigan St., Chicago, Ill.—Exhaust Heads.
Lynch, Edward, & Co., 19 So. Canal St., Chicago, Ill.—Leather Belting.
Lyons Engine Co., Lyons, Mich.—Gasoline Engines.
McCambridge & Co., Ltd., 523 Cherry St., Philadelphia, Pa.—Pipe Fittings.
McClave-Brooks Co., Scranton, Pa.—Grate Bars, Stokers, etc.
McConnell Asbestos Co., Ltd., 265 Water St., Pittsburg, Pa.—Packing.
McCrea, James, & Co., 67 W. Washington St., Chicago, Ill.—Flue Cleaners, Steam Traps.
McDonald, A. Y., & Morrison Mfg. Co., Dubuque, Ia.—Pipe Fittings, Power Pumps.
McDowell & Co., Pittsburg, Pa.—Steam Pumps.
McEwen Bros., Wellsville, N. Y.—Portable Engines.
McGowan, John H. Co., Cincinnati, O.—Exhaust Heads, Separators, Pumps.
McIntosh, Seymour, & Co., Auburn, N. Y.—Blowing Engines.
McKay, Jas., & Co., McKees Rocks, Pa.—Chain or Link Belting.
McKeown, H. J., Cincinnati, O.—Hoisting Engines. *See adv. page 16.*
McKiernan Drill Co., 170 Broadway, New York.—Air Compressors, Pumps.
McLain, J. H., Co., Canton, O.—House Heating Boilers.
McLean, John, 440 Water St., New York.—Gate Valves.
McLeod Co., 95 Liberty St., New York.—Pipe Fittings.
McMahon & Co., Worcester, Mass.—Friction Clutches.
McMurray, C. F., Co., Troy, N. Y.—Hangers, Pulleys, etc.
McNab & Harlin Mfg. Co., 56 John St., New York.—Pipe Fittings, Valves, etc.
McNeil, Jas., & Bro. Co., 29th & Railroad Sts., Pittsburg, Pa.—Riveted Pipe.
McRae & Roberts Co., Detroit, Mich.—Gages, Lubricators, etc.
McSwegan, F., & Sons, 120 Liberty St., New York.—Steam Pumps.
Mackay Mfg. Co., Newark, N. J.—Valves.
Mackintosh, Hemphill, & Co., Ltd., Pittsburg, Pa.—Engines.
Macleod, Walter, & Co., Cincinnati, O.—Steam Pumps.
Macomber & Whyte Rope Co., 21 So. Canal St., Chicago, Ill.—Transmission Rope.
Maddock & Herscheli, Princeton, Ind.—Flue Welders.
Magee, Alonzo H., 106-108 Beekman St., New York.—Gaskets, Automatic Valves.
Magee Furnace Co., 32 Union St., Boston, Mass.—House Heating Boilers.
Main Belting Co., 1233 Carpenter St., Philadelphia, Pa.—Canvas Belting.
Malleable Iron Fittings Co., Branford, Conn.—Pipe Fittings.
Manchester Mfg. Co., North Manchester, Ind.—Boiler Cleaners.
Manhattan Rubber Mfg. Co., 18 Vesey St., New York.—Gaskets and Packing.
Manistee Iron Works Co., Manistee, Mich.—Boilers, Engines, Pumps.

Mann-McCann Co., 1210 Fisher Bldg., Chicago, Ill.—Boiler Tube Cleaners.
Mansfield Engineering Co., Mansfield, O.—Engines, Boilers, Pumps.
Manufacturers' Governor Co., Hartford, Conn.—Steam Engine Governors.
Manzel Bros., Buffalo, N. Y.—Lubricators.
Marine Engine & Machine Co., 80 Broadway, New York.—Oil Engines.
Marine Iron Works, Clyburn & Southport Aves., Chicago, Ill. Boilers and Engines.
Marinette Iron Works Mfg. Co., Marinette, Wis.—Gas or Gasoline Engines.
Marion Mfg. Co., Marion, O.—Engines.
Marsh, Jas. P., & Co., 224 Washington St., Chicago, Ill.—Gages, Steam Traps, etc.
Marshutz & Cantrell, San Francisco, Cal.—Portable Engines.
Marston, I. G., & Co., 226 Ruggles St., Boston, Mass. *See adv. page 16.*
Martin Grate Co., 281 Dearborn St., Chicago, Ill.—Shaking Grates.
Maryland Steel Co., Marine Dept., Baltimore, Md.—Marine and Water Tube Boilers.
Maslin, John, & Son, 163 First St., Jersey City, N. J.—Centrifugal, Power, etc., Pumps.
Mason Regulator Co., 158 Summer St., Boston, Mass.—Pump Governors, Regulators, Steam Pumps.
Mason, Volney W., & Co., Providence, R. I.—Friction Couplings and Pulleys.
Massillon Engine & Thresher Co., Massillon, O.—Traction Engines.
Massillon Iron & Steel Co., Massillon, O.—Cast Iron Pipe.
Mast, Foos Co., Springfield, O.—Hand and Power Pumps.
Maud S. Windmill & Pump Co., Lansing, Mich.—Windmill Pumps.
Maurer, Labadie & Co., South Bend, Ind.—Boiler Tube Cleaners and Ejectors.
May Bros., Galesburg, Ill.—Power and Steam Pumps.
Maypole Bros., 60 So. Canal St., Chicago, Ill.—Exhaust Heads.
Means & Fulton Iron Works, Birmingham, Ala.—Tubular Boilers, Riveted Pipe.
Mechanical Rubber Co., Cleveland, O.—Packing.
Mechanics' Iron Foundry Co., 38 Kemble St., Boston, Mass.—Grate Bars.
Mecklenburg Iron Works, Charlotte, N. C.—Boilers, Engines, Pumps.
Medart Patent Pulley Co., St. Louis, Mo.—Couplings, Hangers, Pulleys, etc.
Meier's, Joseph, Sons, 291 Market St., Newark, N. J.—Leather Belting.
Mellor, L. Bancroft, 14 So. 4th St., Philadelphia, Pa.—Boiler Tube Calipers.
Mercer Rubber Co., Trenton, N. J.—Packing.
Mershon Patent Shaking Grate Works, 1203 Filbert St., Philadelphia, Pa.—Shaking Grates. *See adv. page 23.*
Merwarth Metallic Gasket Co., 32 Broadway, New York.—Gaskets and Packing.

Messinger Mfg. Co., Tatamy, Pa.—Portable Engines.
Messmer, Ferd. Mfg. Co., 2702 So. 7th St., St. Louis, Mo.—Gears.
Mesta Machine Co., Pittsburg, Pa.—Engines and Gears.
Metropolis Rubber Co., 116 Bleecker St., New York.—Packing.
Mianus Motor Works, Mianus, Conn.—Gas or Gasoline Engines.
Michigan Brass & Iron Works, Detroit, Mich.—Valves.
Michigan Heater Co., Big Rapids, Mich.—Cast Iron Pipe.
Michigan Lubricator Co., Detroit, Mich.—Gages, Lubricators.
Michigan Sprocket Chain Co., Detroit, Mich.—Chain or Link Belting.
Middletown Machine Co., Middletown, O.—Gas or Gasoline Engines.
Mietz, August, 128 Mott St., New York.—Engines, Power, etc., Pumps.
Miller Improved Gas Engine Co., Springfield, O.—Gas or Gasoline Engines.
Milwaukee Brass Mfg. Co., Milwaukee, Wis.—Brass Pipe Fittings.
Milwaukee Leather Belting Co., Milwaukee, Wis.—Leather Belting.
Mineralized Rubber Co., Inc., 18 Cliff St., New York.—Gaskets, Packing, etc.
Minneapolis Steel & Machinery Co., 2854 Minnehaha Ave., Minneapolis, Minn.—Boilers, Engines and Power Transmission Appliances.
Missouri Belting Co., St. Louis, Mo.—Leather Belting.
Model Gas Engine Co., Auburn, Ind.—Gas or Gasoline Engines.
Model Heating Co., 716 Arch St., Philadelphia, Pa.—House Heating Boilers.
Moline Pump Co., Moline, Ill.—Gas or Gasoline Engines, Power, etc., Pumps.
Monash-Younker Co., 203 So. Canal St., Chicago, Ill.—Separators, Steam Traps, etc.
Monighan Machine Works, 813 Carroll Av., Chicago, Ill.—Hoisting Engines.
Monitor Water Purifier Co., Lansing, Mich.—Feed Water Filters.
Montgomery Bros., 48 No. Front St., Philadelphia, Pa.—Packing and Belt Dressing.
Moore & White Co., 15th St. & Lehigh Ave., Philadelphia, Pa. Hangers, Pulleys, Pumps, etc.
Morgan & Co., 40 Dearborn St., Chicago, Ill.—Air Automatic Valves.
Morgan & Wright, 331 W. Lake St., Chicago, Ill.—Gaskets and Packing.
Morris County Machine & Iron Co., Dover, N. J.—Hoisting Engines, Steam Pumps.
Morris, I. P., Co., Philadelphia, Pa.—Marine Engines.
Morris Machine Works, Baldwinsville, N. Y.—Engines, Power, etc., Pumps.
Morse, Andrew J., & Son, 138 Congress St., Boston, Mass.—Air, Power and Steam Pumps.
Morse Chain Co., Trumansburg, N. Y.—Transmission Chains. *See adv. page 19.*

Morse, Williams & Co., Frankford Ave. & Shockamaxon St., Philadelphia, Pa.—Hydraulic Engines, Gears. *See adv. page 20.*

Mosher Water Tube Boiler Co., 1 Broadway, New York.—Boilers and Steam Separators.

Mott, J. L. Iron Works, 88 Beekman St., New York.—House Heating Boilers, Feed Water Heaters, etc.

Motter, Geo. F., & Sons, York, Pa.—Boilers, Engines, Pumps.

Mueller, H., Mfg. Co., Decatur, Ill.—Brass Fittings.

Mulford Heater Co., Galva, Ill.—House Heating Boilers.

Mundy, J. S., 22 Prospect St., Newark, N. J.—Boilers, Engines and Centrifugal Pumps.

Munson, Chas., Belting Co., 40 So. Canal St., Chicago, Ill.—Leather Belting and Belt Dressing.

Murray Iron Works Co., Burlington, Ia.—Boilers, Engines, Pumps.

Murray & Tregurtha Co., South Boston, Mass.—Water Tube Boilers, Gas or Gasoline Engines.

Myers, F. E., & Bro., Ashland, O.—Hand, Power, etc., Pumps.

Myrick Machine Co., Olean, N. Y.—Gas Engines.

Nadig, C. H., & Bro., Mfg. Co., Allentown, Pa.—Hoisting Engines.

Nagle Engine & Boiler Works, Erie, Pa.—Boilers and Engines.

Nason Mfg. Co., 71 Fulton St., New York.—Feed Water Heaters, Regulators, etc.

Nathan Mfg. Co., 92 Liberty St., New York.—Ejectors, Injectors, Lubricators, etc.

National Brass & Metal Co., Minneapolis, Minn.—Copper Floats and Oil Cups.

National Engineering Co., Saginaw, Mich.—Gas or Gasoline Engines.

National Foundry & Machine Co., Louisville, Ky.—Air Compressors, Power, etc., Pumps.

National Gear Wheel & Foundry Co., Allegheny, Pa.—Gas or Gasoline Engines, Gears, etc.

National India Rubber Co., Bristol, R. I.—Gaskets and Packing.

National Machine Tool Co., Cincinnati, O.—Speed Transmission Devices.

National Meter Co., 84-86 Chambers St., New York.—Gas or Gasoline Engines.

National Oil Burner & Equipment Co., Holland Bldg., St. Louis, Mo.—Fuel Economizers.

National Pipe Bending Co., New Haven, Conn.—Feed Water Heaters and Bent Pipe.

National Steam Pump Co., Upper Sandusky, O.—Steam Pumps.

National Tube Co., Pittsburg, Pa.—Pipe.

National Water Tube Boiler Co., New Brunswick, N. J.—Water Tube Boilers and Grate Bars.

National Wooden Pipe Co., Los Angeles, Cal.—Wooden Pipe.

Naugatuck Mfg. Co., Naugatuck, Conn.—Copper Floats and Gages.

Naylor, John S., Girard Av. & Front St., Philadelphia, Pa.—Corliss Engines, Boilers, etc.

Neafie & Levy Ship & Engine Bldg. Co., 1336 Beach St., Philadelphia, Pa.—Marine Boilers and Engines.

Neemes Bros., Troy, N. Y.—Grate Bars and Shaking Grates.

Nelson, Chas., 429 E. 10th St., New York.—Cast Iron Pipe, Valves, *etc.*
Nelson, N. O., Mfg. Co., 8th & St. Charles Sts., St. Louis, Mo.—Wooden Hand Pumps.
Nelson Valve Co., Wyndmoor, Pa.—Valves.
Neustadt-Perry Co., 826 So. 18th St., St. Louis, Mo.—Gas or Gasoline Engines.
Nevin & Wetmore Iron Works, Lowville, N. Y.—Centrifugal, Power and Steam Pumps.
New Bedford Boiler & Machine Co., New Bedford, Mass.—Boilers, Valves, etc.
New Birdsall Co., Auburn, N. Y.—Engines.
New Britain Machine Co., New Britain, Conn.—High Speed Engines. *See adv. page 6.*
Newburgh Ice Machine & Engine Co., Newburgh, N. Y.—Compound and Corliss Engines.
New England Roller Grate Co., Springfield, Mass.—Grate Bars.
New Era Gas Engine Co., Dayton, O.—Gas or Gasoline Engines.
New Jersey Asbestos Co., Camden, N. J.—Gaskets and Packing.
New Jersey Foundry & Machine Co., 9 Murray St., New York. Tubular Boilers, Chain Belting, etc.
Newman Mfg. Co., 26 Cortlandt St., New York.—Valves.
New Process Rawhide Co., Syracuse, N. Y.—Gears.
New York Air Brake Co., 66 Broadway, N. Y.—Air Compressors, Power, etc., Pumps.
New York Belting & Packing Co., 25 Park Place, New York.—Gaskets, Belting.
New York Grate Bar Co., Jersey City, N. J.—Grate Bars.
New York Kerosene Oil Engine Co., 31 Burling Slip, New York.—Oil Engines.
New York Leather Belting Co., 8 Ferry St., New York.—Leather Belting and Dressing.
New York Rubber Co., 84 Reade St., New York.—Gaskets, Packing, etc.
New York Safety Steam Power Co., 113 Liberty St., New York. Water Tube Boilers and Engines.
Nichols, D. M., 2 Gouverneur Slip, New York.—Marine Boilers, Engines, etc.
Nichols & Langworthy Machine Co., Hope Valley, R. I.—Boilers and High Speed Engines.
Nichols & Shepard Co., Battle Creek, Mich.—Engines.
Nicholson & Co., Rankin Station, Pa.—Chain or Link Belting.
Nolte Brass Co., Springfield, O.—Gages, Valves and Whistles.
Nordberg Mfg. Co., Milwaukee, Wis.—Condensers, Engine Governors, etc.
Nordyke & Marmon Co., Indianapolis, Ind.—Portable Engines.
Northern Engineering Works, Detroit, Mich.—Gas or Gasoline Engines.
North Star Mfg. Co., Minneapolis, Minn.—Gasoline Engines.
Northwest Thresher Co., Stillwater, Minn.—Portable Engines.
Northwestern Iron Works, Seattle, Wash.—Gasoline Engines.
Norton, H. M., 2d & Northampton Sts., Easton, Pa.—House Heating Boilers.
Norton & Cole Machinery Co., Cincinnati, O.—Hoisting and Portable Engines.

Norwalk Iron Works Co., South Norwalk, Conn.—Belt Tighteners, Air Compressors. *See adv. page 14.*
Norwich Belt Mfg. Co., Norwich, Conn.—Leather Belting, Hydraulic Pumps.
Norwood Engineering Co., Florence, Mass.—Power and Steam Pumps.
Nott, W. S., Co., Minneapolis, Minn.—Leather Belting.
Novelty Mfg. Co., Omaha, Neb.—Float Valves.
Noye Mfg. Co., Buffalo, N. Y.—Engines, Power and Steam Pumps.
Nusbaum, F. A., Dayton, Ohio.—Steam Clamps, Oil Filters. *See adv. page 15.*
Nuttall, R. D., Co., Pittsburg, Pa.—Gears.
Oakes, William L., Decatur, Ill.—Boilers, Gas Engines, Steam Pumps.
Oesterlein Machine Co., Cincinnati, O.—Clutches, Pulleys, etc.
Ofeldt, F. W., & Sons, Foot of W. 25th St., Brooklyn, N. Y.—Marine Boilers, Gas or Gasoline Engines.
Ohio Brass Co., Mansfield, O.—Gages, Lubricators, etc.
Ohio Brass & Iron Mfg. Co., Cleveland, O.—Radiator Valves.
Ohio Electric Works, Cleveland, Ohio.—Gas or Gasoline Engines.
Ohio Injector Co., Wadsworth, O.—Ejectors and Injectors.
Ohio Machine Co., Middleport, O.—Marine Engines.
Ohio Motor Co., Sandusky, O.—Gasoline Motors.
Oil City Boiler Works, Oil City, Pa.—Boilers and Engines.
Oil Well Supply Co., Pittsburg, Pa.—Boilers, Valves, etc.
Olds Motor Works, Detroit, Mich.—Gas and Gasoline Engines.
Olin Gas Engine Co., Buffalo, N. Y.—Marine Engines.
Olney & Warrin, 36 Dey St., New York.—Tubular Boilers, Engines, Steam Pumps, etc.
Olsen, Tinius, & Co., 500 No. 12th St., Philadelphia, Pa.—Test Pumps.
Oneida Community, Ltd., Niagara Falls, N. Y.—Chain or Link Belting.
Oneida Steel Pulley Co., Oneida, N. Y.—Hangers, Pulleys, etc.
Oram, John S., 160-172 Coe St., Cleveland, O.—Power and Steam Pumps.
Oswego Tool Co., Oswego, N. Y.—Boiler Tube Expanders.
Otto Gas Engine Works, 33d & Walnut Sts., Philadelphia, Pa. Gas and Oil Engines.
Ottumwa Iron Works, Ottumwa, Ia.—Hoisting Engines.
Oxford Mfg. Co., Oxford, Pa.—Gasoline Motors.
Pacific Iron Works, Bridgeport, Conn.—Hoisting Engines.
Page Belting Co., Concord, N. H.—Leather Belting.
Palmer, N., & Co., Bridgeport, Conn.—Leather Belting and Belt Dressing.
Palmer Bros., Mianus, Conn.—Gas or Gasoline Engines.
Pancoast, Henry B., & Co., 243 S. Third St., Philadelphia, Pa.—Pipe Fittings, Unions, Railing Fittings.
Pardee, C., Works, Perth Amboy, N. J.—Shafting.
Patterson, Frank L., & Co., 26 Cortlandt St., New York.—Exhaust Heads, Separators, Power Pumps.
Patterson Regulator Co., Baltimore, Md.—Regulators.
Pawling & Harnischfeger, Milwaukee, Wis.—Hoisting Engines.
Payne Co., Elmira, N. Y.—Engines.
Pease Engine & Machine Works, Goshen, Ind.—Gasoline Engines.

Peck Bros. & Co., New Haven, Conn.—Beer and Ale Pumps.
Pedrick & Ayer Co., Plainfield, N. J.—Boiler Tube Cleaners, Air Compressors.
Peerless Belt Lacing Machine Co., Swanson & Moore Sts., Philadelphia, Pa.—Belt Lacing Machines. *See adv. page 24.*
Peerless Belting Co., Buffalo, N. Y.—Leather Belting.
Peerless Lubricant Mfg. Co., 29 West St., New York.—Belt Dressing.
Peerless Motor Co., Lansing, Mich.—Gasoline Engines.
Peerless Rubber Mfg. Co., 16 Warren St., New York.—Gaskets, Packing, Belting. *See adv. page 8.*
Pelton Water Wheel Co., 127 Main St., San Francisco, Cal.—Riveted Pipe and Water Motors.
Penberthy Injector Co., Detroit, Mich.—Ejectors, Injectors and Jet Pumps.
Penn Engineering Co., 312 Cherry St., Philadelphia, Pa.—Automatic and Radiator Valves.
Pennsylvania Carbon-Graphite Co., Scranton, Pa.—Belt Dressing.
Pennsylvania Iron Works Co., 50th St. & Lancaster Ave., Philadelphia, Pa.—Gas or Gasoline and Marine Engines.
Pennsylvania Rubber Co., Jeannette, Pa.—Packing, Belting.
Percy, Chas. W., 212 Summer St., Boston, Mass.—Marine Engines.
Perkes, Chas., 627 Arch St., Philadelphia, Pa.—Valves, Air and Hand Pumps.
Perkins, B. F., & Son, Holyoke, Mass.—Ejectors, Power Transmission Appliances. *See adv. page 24.*
Perkins Launch & Motor Co., Gloucester, Mass.—Gas or Gasoline Engines.
Perkins Windmill & Axe Co., Mishawaka, Ind.—Hand, Power and Steam Pumps.
Phelps & Bigelow Windmill Co., Kalamazoo, Mich.—Steam Pumps.
Phenix Metallic Packing Co., 7 So. Jefferson St., Chicago, Ill. Automatic Lubricators.
Philadelphia Gear Works, 7th & Cherry Sts., Philadelphia, Pa.—Gears. *See adv. page 23.*
Phillips Co., 164 High St., Boston, Mass.—Gages, Lubricators.
Phoenix Iron Works Co., Meadville, Pa.—Boilers and Engines.
Phoenix Mfg. Co., Eau Claire, Wis.—Throttling Engines.
Pickering Governor Co., Portland, Conn.—Steam Engine Governors.
Pierce, Wm. B., Co., Buffalo, N. Y.—Boiler Tube Cleaners.
Pierce-Crouch Engine Co., New Brighton, Pa.—Gas or Gasoline Engines.
Pierce Engine Co., Racine, Wis.—Gasoline Engines.
Pierce Well Engineering & Supply Co., 136 Liberty St., New York.—Artesian and Deep Well Pumps.
Pilley Packing & Flue Brush Mfg. Co., St. Louis, Mo.—Boiler Tube Cleaners, Packing, etc.
Pilling Air Engine Works, Bucyrus, O.—Pneumatic Motors.
Pioneer Brass Works, Indianapolis, Ind.—Metallic Packing, Brass Fittings.
Pittsburg Feed Water Heater Co., Carnegie Bldg., Pittsburg, Pa.—Feed Water Heaters.
Pittsburg Filter & Water Heater Co., Pittsburg, Pa.—Feed Water Filters.

Pittsburgh Gage & Supply Co., Pittsburg, Pa.—Exhaust Heads, Gages, etc. *See adv. pages 10, 11.*
Pittsburg Gas Engine Co., Pittsburg, Pa.—Gas Engines.
Pittsburg Pulley Co., Pittsburg, Pa.—Pulleys.
Pittsburg Steam Jacket Lubricator Co., Pittsburg, Pa.—Sight Feed Lubricators.
Pittsburg Steel Shafting Co., Rankin Station, Pa.—Shafting.
Pittsburg Valve, Foundry & Construction Co., Pittsburg, Pa.—Cast Iron Pipe Fittings, Valves, Steam Pumps.
Playford Stoker Co., Cleveland, O.—Grate Bars and Stokers.
Pleuger & Henger Mfg. Co., St. Louis, Mo.—Brass Pipe Fittings and Gate Valves.
Pneumatic Engineering Co., 128 Broadway, New York.—Power and Steam Pumps.
Pohl, George D., Mfg. Co., Vernon, N. Y.—Gasoline Engines.
Pollock, Wm. B., Co., Youngstown, O.—Water Tube Boilers and Riveted Pipe.
Poole Engineering & Machine Co., Baltimore, Md.—Couplings, Hangers, etc.
Porter, H. K., Co., Pittsburg, Pa.—Locomotive Engines.
Porter, J. E., Co., Ottawa, Ill.—Beer and Ale, Power, etc., Pumps.
Port Huron Engine & Thresher Co., Port Huron, Mich.—Traction Engines.
Portland Co., Inc., Portland, Me.—Boilers, Engines and Vacuum Pumps.
Post, E. L., & Co., 50 Cliff St., New York.—Belt Dressing.
Potter Separator Co., 43 Cortlandt St., New York.—Steam Superheaters.
Powell, Wm., Co., Cincinnati, O.—Gages, Lubricators and Oil Pumps.
Power Specialty Co., Buffalo, N. Y.—Engines, Water Motors.
Powers Regulator Co., 40 Dearborn St., Chicago, Ill.—Regulators.
Pratt & Cady Co., Hartford, Conn.—Gages and Valves.
Prentice, L. H., Co., 24 Sherman St., Chicago, Ill.—Exhaust Heads.
Presbrey, C. H., & Co., Sterling, Ill.—Power and Steam Pumps.
Prescott Steam Pump Co., Milwaukee, Wis.—Steam Pumps.
Prouty Gasoline Locomotive Co., Ltd., Lansing. Mich.—Gasoline Engines.
Providence Engineering Works, Providence, R. I.—Engines.
Providence Steam Trap Co., Providence, R. I.—Grease Extractors, Steam Traps, etc.
Prox & Brinkman Mfg. Co., Terre Haute, Ind.—House Heating Boilers, Gas or Gasoline Engines.
Pulling, James G., & Co., Columbus, O.—Centrifugal, Power, etc., Pumps.
Pulsometer Steam Pump Co., 135 Greenwich St., New York.—Power, Steam, etc., Pumps.
Pulverized Coal Stoker Co., 31 Burling Slip, New York.—Stokers.
Purity Oil Filter Mfg. Co., Pittsburg, Pa.—Oil Filters.
Pusey & Jones Co., Wilmington, Del.—Boilers, Engines, Power, etc., Pumps.
Putnam Foundry & Machine Co., Putnam, Conn.—House Heating Boilers.
Putnam Machine Co., Fitchburg, Mass.—Automatic Cut Off Engines.

Quaker City Rubber Co., 409 Market St., Philadelphia, Pa.—Packing, Belting, etc.
Quaker Mfg. Co., Chicago Heights, Ill.—Cast Iron Pipe Fittings.
Queen City Brass & Iron Works, Cincinnati, O.—Brass Pipe Fittings, Valves, etc.
Queen City Engineering Co., Buffalo, N. Y.—Tubular Boilers, Marine Engines, Power, etc., Pumps.
Quimby, Wm. E., Inc., 86 Liberty St., New York.—Centrifugal, Power, etc., Pumps.
Quimby Engineering Co., 913 Ridge Ave., Philadelphia, Pa.—Gages.
Quincy Engine Works, Quincy, Ill.—Engines, Pulleys and Electric Pumps.
Quincy Valve & Mfg. Co., Quincy, Ill.—Valve Reseating Machines, Valves, etc.
Quintard Iron Works, 742 E. 12th St., New York.—Tubular and Marine Boilers and Engines.
Racine Engine & Iron Works, Racine, Wis.—Boilers, Engines and Steam Pumps.
Rahmann, Geo., & Co., 31 Ferry St., New York.—Leather Belting.
Rand Drill Co., 128 Broadway, New York.—Portable Engines, Air Compressors, etc. *See adv. page 21.*
Randle Machinery Co., Cincinnati, O.—Tubular Boilers and Injectors.
Raniville, F., Grand Rapids, Mich.—Leather Belting.
Rarig Engineering Co., Columbus, O.—Boilers, Engines, Air Compressors, etc.
Rawson & Morrison Mfg. Co., Cambridgeport, Mass.—Tubular Boilers and Engines.
Reading Foundry Co., Reading, Pa.—Cast Iron Pipe.
Reagan Grate Bar Co., 209 No. Front St., Philadelphia, Pa.—Grate Bars and Indicators.
Red Cross Mfg. Co., Bluffton, Ind.—Hand and Windmill Pumps.
Red Jacket Mfg. Co., Davenport, Ia.—Hand, Power, etc., Pumps.
Reed Mfg. Co., Erie, Pa.—Oil Cups.
Rees, Jas., & Sons Co., Pittsburg, Pa.—Boilers, Engines and Steam Pumps.
Reeves & Co., Columbus, Ind.—Boilers and Engines.
Reeves Engine Co., Trenton, N. J.—Engines.
Reeves Pulley Co., Columbus, Ind.—Pulleys, Countershafts.
Regal Packing Co., 1402 Monadnock Blk., Chicago, Ill.—Metallic Packing.
Regester's, J., Sons Co., Baltimore, Md.—Valves.
Reilley Bros., 324 W. 41st St., New York.—Painter's Oil Pumps.
Reilly & Fearon, 1154 No. 3d St., Philadelphia, Pa.—Boilers and Engines.
Reliable Mfg. Co., Pittsburg, Pa.—Gages and Valves.
Reliable Water Gauge Co., 1616 Pine St., St. Louis, Mo.—Water Gages.
Reliance Gauge Column Co., Cleveland, O.—Water Columns, Steam Traps, etc. *See adv. page 15.*
Reliance Machine & Tool Works, 3323 Franklin Ave., St. Louis, Mo.—Air Compressors, Steam, etc., Pumps.

Remington Machine Co., Wilmington, Del.—Corliss Engines.
Rensselaer Mfg. Co., Troy, N. Y.—Air Automatic and Gate Valves.
Replogle Governor Works, Chestnut St., Akron, O.—Water Wheel Governors.
Republic Rubber Co., Youngstown, O.—Gaskets, Packing, etc.
Restein, Clement, & Co., 139 No. 2d St., Philadelphia, Pa.—Packing.
Revere Rubber Co., 77 Bedford St., Boston, Mass.—Gaskets, Packing, etc.
Reynolds, M. Plumbers' Supply Co., 25 Centre St., New York Hand Pumps.
Reynolds, Graves & Co., Joplin, Mo.—Gasoline Motors.
Rhodes, J. E., & Sons, Wilmington, Del.—Belting and Belt Dressing.
Richmond Machine Works, Richmond, Ind.—Boilers and Engines.
Richmond & Holmes, St. Johns, Mich.—Gasoline Motors.
Rider-Ericsson Engine Co., 35 Warren St., New York.—Hot Air Pumps.
Ridgway Dynamo & Engine Co., Ridgway, Pa.—Automatic Cut Off and High Speed Engines.
Riehle Bros. Testing Machine Co., 1424 No. 9th St., Philadelphia, Pa.—Hydraulic Pumps.
Risdon Iron & Locomotive Works, San Francisco, Cal.—Boilers, Engines and Pumps.
Riter-Conley Mfg. Co., Pittsburg, Pa.—Riveted Pipe.
Roberts, Geo. J., & Co., Dayton, O.—Power and Steam Pumps.
Roberts Engineering Co., Pittsburg, Pa.—Engines and Chain Belting.
Roberts Machine Co., East Palestine, O.—Gas or Gasoline Engines.
Roberts Safety Water Tube Boiler Co., 39 Cortlandt St., New York.—Water Tube Boilers.
Robertson, Jas. L., & Sons, 204 Fulton St., New York.—Exhaust Heads, Separators, etc.
Robertson Mfg. Co., 1451 Niagara St., Buffalo, N. Y.—Gas or Gasoline Engines.
Robins Conveying Belt Co., Park Row Bldg., New York.—Belting, Pulleys, etc.
Robinson & Co., Richmond, Ind.—Boilers and Engines.
Robson, Chas. W., W. Washington Ave. & 8th St., Philadelphia, Pa.—Grate Bars.
Rochester Machine Tool Works, Ltd., Rochester, N. Y.—Boilers and Engines.
Rock River Machine Co., Janesville, Wis.—Power Pumps.
Rockwood Mfg. Co., Indianapolis, Ind.—Paper Pulleys.
Rogers Locomotive Works, Paterson, N. J.—Locomotive Boilers and Engines.
Rollins Engine Co., Nashua, N. H.—Automatic Cut Off Engines.
Rollins Flue Cleaner Co., Albany, N. Y.—Boiler Tube Cleaners.
Rome Sanitary Works, Rome, N. Y.—Copper Floats.
Root, C. J., Bristol, Conn.—Revolution Counters.
Root & Vandervoort Engineering Co., Champaign, Ill.—Gasoline Engines.
Roots, P. H. & F. M., Co., Connersville, Ind.—Power and Steam Pumps.

Rose Patent Grate Co., Council Bluffs, Ia.—Grate Bars.
Rosedale Foundry & Machine Co., Allegheny, Pa.—Stokers.
Ross, Josiah, Buffalo, N. Y.—Countershafts and Shafting.
Ross & Co., 95 Liberty St., New York.—Stokers.
Ross Valve Co., Troy, N. Y.—Gate Valves.
Rossendale-Reddaway Belting & Hose Co., Newark, N. J.—Canvas and Hair Belting.
Royal Equipment Co., Bridgeport, Conn.—Gasoline Engines.
Rue Mfg. Co., 215 Race St., Philadelphia, Pa.—Ejectors and Injectors.
Ruemmeli-Dawley Mfg. Co., 3900 Chouteau Ave., St. Louis, Mo.—Cooling Towers.
Ruger, J. W., Mfg. Co., Buffalo, N. Y.—Gas or Gasoline Engines.
Rumely, M., Co., La Porte, Ind.—Tubular Boilers, Traction Engines.
Rumsey & Co., Ltd., Seneca Falls, N. Y.—Air Compressors, Power, etc., Pumps.
Rundle-Spence Mfg. Co., Milwaukee, Wis.—Pipe Fittings and Valves.
Rusden Machine Co., Warren, R. I.—Gasoline Engines.
Russell, Albert, & Sons Co., Newburyport, Mass.—Marine Pumps.
Russell, W. A., & Co., 89 Centre St., New York.—Automatic and Globe Valves.
Russell Engine Co., Massillon, O.—Engines.
Russell Mfg. Co., Middletown, Conn.—Canvas Belting.
Rutzler, E., 178 Centre St., New York.—Exhaust Heads, Steam Traps, etc.
St. Joseph Pump & Mfg. Co., St. Joseph, Mo.—Hand, Power, etc., Pumps.
St. Louis Iron & Machine Works, St. Louis, Mo.—Engines.
St. Louis Steam Engine Co., St. Louis, Mo.—Vertical Engines.
Safety Cylinder Valve Co., Mansfield, O.—Safety Pop and Water Relief Valves.
Saginaw Mfg. Co., Saginaw, Mich.—Wood Split Pulleys.
Salamander Grate Bar Co., 126 Liberty St., New York.—Grate Bars.
Salem Iron Works, Salem, N. C.—Tubular Boilers, Portable Engines.
San Francisco Tool Works, San Francisco, Cal.—Portable Engines, Power, etc., Pumps.
Sands, Alfred B., & Son, 134 Beekman St., New York.—Hand and Bilge Pumps.
Sandy Hill Iron & Brass Works, Sandy Hill, N. Y.—Paper Mill Pumps.
Sargent & Greenleaf Co., Rochester, N. Y.—Vacuum Pumps.
Sarvent Marine Engine Works, 26 W. Randolph St., Chicago, Ill.—Gasoline Engines.
Sawyer Belting Co., East Cambridge, Mass.—Canvas Belting.
Sawyer Gear Works, 227 St. Clair St., Cleveland, O.—Gears.
Sawyer Hardware & Supply Co., Pawtucket, R. I.—Belt Fasteners.
Scaife, Wm. B., & Sons, 221 First Ave., Pittsburg, Pa.—Feed Water Heaters and Purifiers.
Scattergood, D., & Co., 3d & Arch Sts., Philadelphia, Pa.—Tubular Boilers and Portable Engines.
Schaeffer & Budenberg Mfg. Co., St. Edwards & Bedford Sts., Brooklyn, N. Y.—Lubricators, Valves, Pumps.

Scheidler, Reinhart, Newark, O.—Boilers and Engines.
Schieren, Chas. A., & Co., 45 Ferry St., New York.—Leather Belting and Belt Dressing.
Schmidt, G. & L., 216 Centre St., New York.—Gages.
Schofield Gear & Pulley Co., Providence, R. I.—Gears and Pulleys.
Schoonmaker, A. G., Co., 29 West St., New York.—Steam Traps.
Schultz Belting Co., St. Louis, Mo.—Rawhide Belting.
Schutte & Korting Co., 12th & Thompson Sts., Philadelphia, Pa.—Ejectors, Steam Traps, etc.
Scobee Loose Pulley Lubricator Co., Winchester, Ky.—Loose Pulley Oilers.
Scott Motor Works, 2112 Washington Av., St. Louis, Mo.—Gasoline Motors.
Scovill Mfg. Co., Waterbury, Conn.—Boiler Pumps.
Scranton Steam Pump Co., Scranton, Pa.—Steam Pumps.
Seelye Mfg. Co., 118 South St., Boston, Mass.—Hangers.
Seibert Cylinder Oil Cup Co., 53 Oliver St., Boston, Mass.—Oil Cups and Sight Feed Lubricators.
Sellers, Wm., & Co., Inc., 1600 Hamilton St., Philadelphia, Pa.—Couplings, Hangers, Pulleys, etc.
Sharpless & Watts, 1522 Chestnut St., Philadelphia, Pa.—Grate Bars.
Shaw Coupling Co., Syracuse, N. Y.—Compression Couplings.
Shepherd Engineering Co., Franklin, Pa.—Engines.
Sheriffs Mfg. Co., Milwaukee, Wis.—Engines.
Sherman, R. R., & Co., Boston, Mass.—Power Pumps.
Sherwood Mfg. Co., Buffalo, N. Y.—Lubricators, etc., and Oil Pumps.
Siegrist Lubricator Co., St. Louis, Mo.—Lubricators.
Sikes, S. R., Co., Minneapolis, Minn.—Leather Belting.
Simonds, Frank A., Grand Rapids, Mich.—Steam Receivers and Separators.
Simmons Pipe Bending Works, Newark, N. J.—Bent Pipe.
Simonds Mfg. Co., Pittsburg, Pa.—Gears.
Sims Co., Erie, Pa.—Exhaust Heads, Injectors, etc.
Sinclair-Scott Co., Baltimore, Md.—Friction Clutches and Pulleys.
Sinker-Davis Co., Indianapolis, Ind.—Portable Engines and Engine Governors.
Sintz Gas Engine Co., Detroit, Mich.—Gas Engines.
Sipp Electric & Machine Co., Paterson, N. J.—Boilers and Engines.
Skillin & Richards Mfg. Co., 127 Fulton St., Chicago, Ill.—Gas or Gasoline Engines.
Skinner & Arnold Co., Albany, N. Y.—Tubular Boilers and Marine Engines.
Skinner Engine Co., Erie, Pa.—Engines and Boilers.
Smalley Mfg. Co., Manitowoc, Wis.—Portable Engines.
Smalley Motor Co., Ltd., Bay City, Mich.—Gasoline Engines.
Smedley Steam Pump Co., Dubuque, Ia.—Steam Pumps.
Smith, A. P., Mfg. Co., Newark, N. J.—Gate Valves.
Smith, F. L., Franklin Falls, N. H.—Friction Clutches.
Smith, H. B., Co., Westfield, Mass.—Tubular Boilers and Air Valves.
Smith, James, & Co., 411 Race St., Philadelphia, Pa.—Gaskets, Packing, etc.

Smith, Jas., Woolen Machinery Co., 411 Race St., Philadelphia, Pa.—Hangers, Pulleys, etc.
Smith, S. Morgan Co., New York.—Couplings, Gears and Pumps.
Smith, W. R., 262 W. 52d St., New York.—Gas or Gasoline Engines.
Smith, Myers & Schnier Co., Cincinnati, O.—Boilers, Engines and Pumps.
Snider-Hughes Co., Cleveland, O.—Blowing Engines, Air Compressors, Power, etc., Pumps.
Snow Steam Pump Works, 114 Liberty St., New York.—Steam Pumps.
Sotter Bros., Inc., Pottstown, Pa.—House Heating Boilers.
South Park Foundry & Machine Co., St. Paul, Minn.—Tubular Boilers and Gate Valves.
Southern Engine & Boiler Works, Jackson, Tenn.—Boilers, Engines and Air Compressors.
Southwark Foundry & Machine Co., 430 Washington Ave., Philadelphia, Pa.—Boilers, Engines and Pumps.
Southwick, Geo. W., & Co., 149 Centre St., New York.—Belt Dressing.
Spade Engine Co., Vicksburg, Mich.—Gas or Gasoline Engines.
Spang, Chalfant & Co., Pittsburg, Pa.—Wrought Iron Pipe.
Specialty Mfg. Co., Indianapolis, Ind.—Water Motors.
Speed Changing Pulley Co., Indianapolis, Ind.—Countershafts.
Speidel, J. G., Reading, Pa.—Chain or Link Belting.
Spence, L., & Son, Martin's Ferry, O.—Engines.
Spencer Regulator Co., Salem, Mass.—Regulators.
Springfield Brass Co., Springfield, O.—Gages, Oil Cups, etc.
Springfield Elevator & Pump Co., Springfield, Mass.—Condensers, Air Compressors, Power, etc., Pumps.
Springfield Gas Engine Co., Springfield, O.—Gas or Gasoline Engines.
Squier, Geo. L., Mfg. Co., Buffalo, N. Y.—Steam Pumps.
Stahl-Salter Lubricating Co., Minneapolis, Minn.—Oil Cups.
Standard Chain Co., Pittsburg, Pa.—Chain or Link Belting.
Standard Gauge Mfg. Co., Syracuse, N. Y.—Gages.
Standard Ice Machine & Mfg. Co., Hamilton, O.—Feed Water Regulators.
Standard Motor Co., Kokomo, Ind.—Gasoline Motors.
Standard Pressed Steel Co., 20th & Clearfield Sts., Philadelphia, Pa.—Hangers and Floor Stands.
Standard Pump & Engine Co., Cleveland, O.—Gas or Gasoline Engines.
Standard Railway Equipment Co., Union Trust Bldg., St. Louis, Mo.—Pneumatic Motors.
Standard Safety Boiler Co., Marquette Bldg., Chicago, Ill.—Water Tube Boilers.
Standard Steam Specialty Co., 111 Fifth Ave., New York.—Boiler Feeders and Pump Governors.
Standard Water Meter Co., 245 Robinson St., Brooklyn, N. Y. Water Motors.
Standard Welding Co., Cleveland, O.—Wrought Iron Pipe.
Star Brass Mfg. Co., 114 E. Dedham St., Boston, Mass.—Gages, Lubricators, etc.
Steam Appliance Co., 241 Greenfield Ave., Milwaukee, Wis.—Ejectors, Injectors, etc.
Stearns Mfg. Co., Erie Pa.—Automatic Cut Off Engines, etc.

Steeger, Henry, 143 E. 31st St., New York.—Air Compressors.
Stephens, Roe, Mfg. Co., Detroit, Mich.—Ejectors, Injectors, Steam Traps, etc.
Stephenson Mfg. Co., Albany, N. Y.—Boiler Tube Cleaners, Belt Dressing.
Sterling Blower & Pipe Mfg. Co., Hartford, Conn.—Exhaust Heads.
Sterling Engine Co., Buffalo, N. Y.—Gas or Gasoline Engines.
Sterling Lubricator Co., Rochester, N. Y.—Autómatic Lubricators.
Stevens, A. W., Co., Marinette, Wis.—Boilers and Engines.
Stewart Heater Co., Buffalo, N. Y.—Condensers, Feed Water Heaters. *See adv. page 9.*
Stickney, Chas. A., Co., St. Paul, Minn.—Engines and Air Compressors.
Stickney, Henry R., Portland, Me.—Marine Engines.
Stilwell-Bierce & Smith-Vaile Co., Dayton, O.—Hangers, Pulleys, Pumps, etc.
Stocker, George J., 2833 S. Kingshighway Road, St. Louis, Mo.—Cooling Towers.
Stokes, Joseph, Rubber Co., Trenton, N. J.—Gaskets and Packing.
Stover Engine Co., Freeport, Ill.—Gas or Gasoline Engines.
Stover Mfg. Co., Freeport, Ill.—Windmill Pumps.
Stow Flexible Shaft Co., 26th & Callowhill Sts., Philadelphia, Pa.—Gears and Flexible Shafting.
Stow Mfg. Co., Binghamton, N. Y.—Flexible Shafting.
Stowell Mfg. & Foundry Co., South Milwaukee, Wis.—Grate Bars.
Straight Line Engine Co., Syracuse, N. Y.—Automatic Cut Off and High Speed Engines.
Strait, H. N., Mfg. Co., Kansas City, Kan.—Corliss Engines, Shafting, Hangers and Pulleys.
Strater, Herman, & Sons, 74 Sudbury St., Boston, Mass.—Beer, Ale and Power Pumps.
Strong, Carlisle & Hammond Co., Cleveland, Ohio.—Pump Governors, Feed Water Regulators, Steam Traps.
Strong Machinery & Supply Co., 2½ Murray St., New York.—Gaskets and Packing.
Struthers-Wells Co., Warren, Pa.—Boilers, Engines, etc.
Stuart, R. J., New Hamburg, N. Y.—Wedge Couplings.
Sturgess Governor Engineering Co., Troy, N. Y.—Steam Engine Governors.
Sturtevant, B. F., Co., Hyde Park, Mass.—Engines, Exhaust Heads, etc.
Sullivan Machinery Co., 135 Adams St., Chicago, Ill.—Boilers and Engines.
Sumner, Wm., Belting Co., Tolland, Conn.—Belting.
Superior Gas Engine Co., Springfield, O.—Gas or Gasoline Engines.
Superior Iron Works, West Superior, Wis.—Engines.
Superior Shipbuilding Co., Superior, Wis.—Marine Engines.
Swain Lubricator Co., 250 Lake St., Chicago, Ill.—Oil Cups and Metallic Belting.
Swift Lubricator Co., Elmira, N. Y.—Automatic Lubricators.
Taber Pump Co., Buffalo, N. Y.—Hand and Power Pumps.
Tabor Mfg. Co., 18th & Hamilton Sts., Philadelphia, Pa.—Revolution Counters.

Talcot, W. O., Providence, R. I.—Belt Fasteners.
Talmage Mfg. Co., Cleveland, O.—Boiler Oil Feeders.
Taper Sleeve Pulley Works, Erie, Pa.—Friction Clutch Pulleys.
Taunton Locomotive Mfg. Co., Taunton, Mass.—Locomotive Boilers, Feed Water Heaters.
Taunton Rubber Mfg. Co., Taunton, Mass.—Gaskets.
Taylor Water Tube Boiler Co., Detroit, Mich.—Water Tube Boilers.
Temple Pump Co., 16-28 W. 15th St., Chicago, Ill.—Hand and Power, etc., Pumps.
Thacher Belting Hook Co., 245 Crawford Road, Cleveland, O.—Belt Fasteners.
Thomas, E. R., Motor Co., Buffalo, N. Y.—Gasoline Motors.
Thomas, Richard H., 107 Liberty St., New York.—Gas or Gasoline Engines.
Thomas Brass & Iron Co , Waukegan, Ill.—Oil Cups, Brass Fittings, etc.
Thomas Mfg. Co., Springfield, O.—Hand Pumps.
Thompson, J., & Sons, Mfg. Co., Beloit, Wis.—Gas or Gasoline Engines.
Thompson, Richard, & Co., 126 Liberty St., New York.—Exhaust Heads, Indicators, etc. *See adv. page 5.*
Thomson & Boyle Co., Los Angeles, Cal.—Cast Iron Pipe Fittings.
Thorpe, Platt & Co., 97 Cedar St., New York.—Steam Traps. *See adv. page 14.*
Thropp, J. E., & Sons, Foot of Lewis St., Trenton, N. J.—Marine Engines.
Tight Joint Co., 306-10 E. 47th St., New York.—Malleable Iron Pipe Fittings.
Titusville Iron Co., Titusville, Pa.—Boilers, Engines, Grate Bars, etc.
Tod, Wm., Co., Youngstown, O.—Engines.
Toledo Foundry & Machine Co., Toledo, O.—Engines and Grate Bars.
Toombs, Samuel S., 10 Peck Slip, New York.—Beer and Ale Pumps.
Townsend Furnace & Machine Shop Co., Albany, N. Y.—Hangers, Shafting, etc.
Trahern Pump Co., Rockford, Ill.—Hand and Power, etc., Pumps.
Tranter-Davison Mfg. Co., Pittsburg, Pa.—Ejectors, Injectors and Pumps.
Trautvetter Bros., Paterson, N. J.—Gages.
Treadwell, M. H., & Co., 97 Liberty St., New York.—Dumping and Shaking Grates.
Trebert, H. L. F., & Co., Rochester, N. Y.—Gas or Gasoline Engines, Gears.
Trenton Rubber Mfg. Co., Trenton, N. J.—Gaskets and Packing.
Trevor Mfg. Co., Lockport, N. Y.—Centrifugal and Power, etc., Pumps.
Trill, W. L., Corry, Pa.—Indicators and Reducing Wheels.
Troy Belting & Supply Co., Troy, N. Y.—Leather Belting.
Troy Engine & Machine Co., Troy, Pa.—Engines.
Truscott Boat Mfg. Co., St. Joseph, Mich.—Marine Boilers, Engines, etc.
Tudor Boiler Mfg. Co., Cincinnati, O.—Boilers and Feed Water Heaters.

Tupper, W. W., & Co., 39 Cortlandt St., New York.—Grate Bars, Dumping and Shaking Grates.
Turner, Vaughn & Taylor Co., Cuyahoga Falls, O.—Chain or Link Belting.
Turners Falls Machine Co., Turners Falls, Mass.—Paper Mill and Power Pumps.
Twiss, Nelson W., New Haven, Conn.—Engines.
Ulmer Leather Co., Norwich, Conn.—Leather Belting.
Under-Feed Stoker Co., 218 La Salle St., Chicago, Ill.—Stokers.
Union Belt Co., Fall River, Mass.—Belting.
Union Boiler & Mfg. Co., Lebanon, Pa.—Steam Blow-Off Tanks.
Union Gas Engine Co., San Francisco, Cal.—Engines.
Union Hardware Co., Torrington, Conn.—Diaphragm Pumps.
Union Iron Works, San Francisco, Cal.—Boilers, Engines and Pumps.
Union Machine Co., Zanesville, O.—Portable Engines.
Union Mfg. Co., New Britain, Conn.—Hand, Power, etc., Pumps.
Union Steam Pump Co., Battle Creek, Mich.—Air Compressors, Power, etc., Pumps.
Union Steam Specialty Co., Scranton, Pa.—Indicators, Separators, etc.
Union Water Meter Co., Worcester, Mass.—Water Motors, Whistles, etc.
United & Globe Rubber Mfg. Co., Trenton, N. J.—Gaskets, Packing, etc.
United States Cast Iron Pipe & Foundry Co., 217 La Salle St., Chicago, Ill.—Cast Iron Pipe.
United States Heater Co., Detroit, Mich.—House Heating Boilers.
United States Metallic Packing Co., 427 N. 13th St., Philadelphia, Pa.—Metallic Packing.
United States Mineral Wool Co., 143 Liberty St., New York.—Gaskets.
United States Pump & Supply Co., Toledo, Ohio.—Centrifugal, Power, etc., Pumps.
United States Wind Engine & Pump Co., Batavia, Ill.—Hand Power, etc., Pumps.
Utica Gas Engine Works, Utica, N. Y.—Gas or Gasoline Engines.
Utica Pipe Foundry Co., Utica, N. Y.—Cast Iron Pipe.
Utica Steam Gauge Co. 123 Liberty St., New York.—Gages and Valves.
Valley Iron Works, Williamsport, Pa.—Hangers, Shafting, etc.
Van Duzen, E. W., Co., Cincinnati, O.—Ejectors, Hangers, and Pumps.
Van Wie, Irvin, Syracuse, N. Y.—Engines and Pumps.
Variety Mfg. Co., 77 W. Lake St., Chicago, Ill.—Exhaust Heads.
Vilter Mfg. Co., Milwaukee, Wis.—Boilers and Corliss Engines.
Vincent Valve Co., Sandusky, O.—Gate Valves.
Voorhees Rubber Mfg. Co., Jersey City, N. J.—Packing.
Vulcan Asbestos Co., 116 Maiden Lane, New York.—Gaskets and Packing.
Vulcan Iron Works, San Francisco, Cal.—Hoisting and Locomotive Engines, etc.
Wadhams Oil & Grease Co., Milwaukee, Wis.—Oil Cups.
Walker & Pratt Mfg. Co., 31 Union St., Boston, Mass.—House Heating Boilers.
Wall, R. C., Mfg. Co., 1334 Race St., Philadelphia, Pa.—Gasoline Motors.

Waltham Mfg. Co., Waltham, Mass.—Gasoline Motors.
Walworth Mfg. Co., 134 Federal St., Boston, Mass.—Steam Traps, Blow-Off Tanks, etc.
Wangler, Jos. F., Boiler & Sheet Iron Works Co., St. Louis, Mo.—Tubular Boilers and Feed Water Heaters.
Ward, Charles, Charleston, W. Va.—Power and Steam Pumps.
Ward Pump Co., Rockford, Ill.—Windmill Pumps.
Warren City Boiler Works, Warren, O.—Tubular Boilers and Riveted Pipe.
Warren Foundry & Machine Co., 160 Broadway, New York.—Cast Iron Pipe.
Warren Steam Pump Co., Warren, Mass.—Air Compressors, Power, etc., Pumps.
Washington Pulley Co., Ballard, Wash.—Wood Split Pulleys.
Waterbury Farrel Foundry & Machine Co., Waterbury, Conn.—Hand and Power Pumps.
Waterbury Rubber Mfg. Co., 49 Warren St., New York.—Rubber Belting.
Waterloo Motor Works, Waterloo, Iowa.—Engines.
Waters Governor Co., 34 Oliver St., Boston, Mass.—Pump and Engine Governors, etc.
Watertown Engine Co., Watertown, N. Y.—Boilers and Engines.
Watkins, F. M., Co., Cincinnati, O.—Boilers and Gas or Gasoline Engines.
Watson, N. A., Erie, Pa.—Ejectors and Injectors.
Watson & McDaniel Co., 146 N. 7th St., Philadelphia, Pa.—Exhaust Heads, Regulators, etc. *See adv. page 12.*
Watson-Stillman Co., 46 Dey St., New York.—Hydraulic Valves and Pumps.
Watt's, John M., Sons, 123 So. 2d St., Philadelphia, Pa.—Gaskets, Packing, Belt Dressing.
Watts-Campbell Co., Newark, N. J.—Compound and Corliss Engines.
Watts Regulator Co., Lawrence, Mass.—Pump Governors, Regulators, etc.
Weber Gas & Gasoline Engine Co., Kansas City, Mo.—Gas and Gasoline Engines.
Webster Mfg. Co., 1075 W. 15th St., Chicago, Ill.—Gasoline Engines.
Webster, Warren & Co., Camden, N. J.—Grease Extractors, Feed Water Filters, etc.
Webster & Perks Tool Co., Springfield, O.—Reducing Wheels.
Wehrfritz, E. C., Machinery & Supply Co., Little Rock, Ark.—Throttling Engines.
Weiman Machine Works, Columbus, O.—Hand and Power, etc., Pumps.
Weimer Machine Works Co., Lebanon, Pa.—Engines and Pumps.
Welch & Lawson, 210 Centre St., New York.—Steam Traps.
Welch, T. F., & Co., 55 Sudbury St., Boston, Mass.—Hangers, Pulleys, etc.
Weller Mfg. Co., 118 North Ave., Chicago, Ill.—Hangers, Pulleys, etc.
Wellman-Seaver-Morgan Co., Cleveland, O.—Boilers and Engines.
Wells, F. C. (Estate of), 116 Clinton St., Chicago, Ill.—Blowing Engines, Power, etc., Pumps.

Welsh, F., 276-277 West St., New York.—Gas or Gasoline Engines.
Western Malleable & Grey Iron Mfg. Co., Milwaukee, Wis.—Gasoline Engines.
Western Rawhide & Belting Co., Milwaukee, Wis.—Rawhide Belting.
Western Tube Co., Kewanee, Ill.—Pipe Fittings, Valves, etc.
Westinghouse Air Brake Co., 200 9th St., Pittsburg, Pa.—Air Compressors.
Westinghouse Co., Schnectady, N. Y.—Traction Engines.
Westinghouse Machine Co., Pittsburg, Pa.—Engines, Turbines, etc.
West Point Iron Works, West Point, Ga.—Portable Engines.
Wetherill, Robert, & Co., Chester, Pa.—Boilers, Engines, Pumps.
Wheaton Machine Co., 368 Congress St., Boston, Mass.—Countershafts.
Wheeler Condenser & Engineering Co., 42 Broadway, New York.—Condensers, Separators, etc.
Whipple Cycle Co., 260 W. Jackson Blvd., Chicago, Ill.—Gasoline Motors.
White, John A., Co., Dover, N. H.—Hangers, Pulleys, etc.
White-Blakeslee Mfg. Co., Birmingham, Ala.—Gas or Gasoline Engines.
White & Middleton Gas Engine Co., Baltimore, Md.—Gas or Gasoline Engines.
Whitehead Bros., Rubber Co., Trenton, N. J.—Gaskets and Packing.
Whitehead, W. W., Co., Davenport, Iowa.—Power Pumps.
Whitlock Coil Pipe Co., Hartford, Conn.—Exhaust Heads, Bent Pipe, etc. *See adv. page 12.*
Whitney Mfg. Co., Hartford, Conn.—Wedge Couplings.
Wickes Bros., Saginaw, Mich.—Boilers, Feed Water Heaters.
Wilbraham-Green Blower Co., 2518 Frankford Ave., Philadelphia, Pa.—Centrifugal and Rotary Pumps.
Wilder, Sydney & Co., Holliston, Mass.—Hand Pumps.
Wilkinson Mfg. Co., Inc., Bridgeport, Pa.—Stokers.
Wilkinson, W. H., & Co., West Medway, Mass.—Lubricators.
Willamette Iron Works, Portland, Ore.—Boilers, Engines, Gears, etc.
Williams Bros., Ithaca, N. Y.—Portable Engines.
Williams Gauge Co., Pittsburg, Pa —Steam Gages, Feed Water Regulators, Pump Governors, etc.
Williams, I. B., & Son, Dover, N. H.—Rawhide Belting.
Williams Mfg. Co., Kalamazoo, Mich.—Steam Pumps.
Williams, White & Co., Moline, Ill.—Portable Engines, Centrifugal Pumps.
Williamson Bros., Richmond & York Sts., Philadelphia, Pa.—Boilers and Engines.
Williamsport Clutch & Pulley Co., Williamsport, Pa.—Clutches, Pulleys, etc.
Willoughby, A. B., The Bourse, Philadelphia, Pa.—Grate Bars. *See adv. page 5.*
Wilmarth & Morman Co., Grand Rapids, Mich.—Countershafts and Pulleys.
Wilson-Snyder Mfg. Co., Ross & Water Sts., Pittsburg, Pa.—Air Compressors, Power, etc., Pumps.
Windsor Locks Machine Co., Windsor Locks, Conn.—Gears, Pulleys, Shafting.

Wing, J. T., & Co., Detroit, Mich.—Boiler Tube Cleaners, Pulleys.
Wing, L. J., Mfg. Co., 251 West Broadway, New York.—Engines.
Winkley Engineering Co., Lynn, Mass.—Gas or Gasoline Engines.
Winship Mfg. Co., Racine, Wis.—Wooden Hand Pumps.
Winter, F. W., & Co., Faribault, Minn.—Power Pumps.
Wise & Bailey, Front & Race Sts., Philadelphia, Pa.—Leather Belting.
Witte Iron Works Co., Kansas City, Mo.—Gas or Gasoline Engines.
Wogaman Mfg. Co., Greenville, O.—Gas or Gasoline Engines.
Wolverine Motor Works, Grand Rapids, Mich.—Gasoline Motors.
Wood, John, Mfg. Co., Conshohocken, Pa.—Water Tube Boilers.
Wood, R. D., & Co., 400 Chestnut St., Philadelphia, Pa.—Cast Iron Pipe, Valves, etc.
Wood's, T. B., Sons, Chambersburg, Pa.—Hangers, Pulleys, etc.
Woodin & Little, 312 Market St., San Francisco, Cal.—Air Compressors, Power, etc., Pumps.
Woodman, R., Mfg. & Supply Co., 63 Oliver St., Boston, Mass. Revolution Counters.
Woodmanse & Hewitt Mfg. Co., Freeport, Ill.—Hand and Steam Pumps.
Woodward Governor Co., Rockford, Ill.—Steam Engine Governors.
Woolley Foundry & Machine Co., Anderson, Ind.—Gas or Gasoline Engines.
Worthington, Henry R., 114 Liberty St., New York.—Power, etc., Pumps.
Worthington National Grate Co., Baltimore, Md.—Grate Bars.
Wright Mfg. Co., Detroit, Mich.—Water Columns, Exhaust Heads, etc.
Wyckoff, A., & Son, Co., Elmira, N. Y.—Hand Pumps.
Young, E. R., & Sons, Titusville, Pa.—Steam Pumps.
Youngstown Iron Sheet & Tube Co., Youngstown, O.—Wrought Iron Pipe.
Zimmerman Mfg. Co., Auburn, Ind.—Hand Pumps.

The numbers following the articles indicate the headings- not the pages.

Index to Tools and Appliances

Acid Pumps ..... See 304
Admiralty Pumps ..... See 288
Aeropher Pumps 249
Agricultural Engines ..... See 36
Air Compressors 243
Air Motors ..... See 44c
Air Pumps 250
Air Valves, Automatic 138
Alarms, Low Water 46
Ammonia Fittings ..... See 110
Ammonia Pumps 251
Artesian and Deep Well Engines ..... See 252
Artesian and Deep Well Pumps 252
Back Pressure Valves 139
Balance Valves 140
Ball and Lever Safety Valves 153
Ball and Socket Hangers, Adjustable 208
Ballast Pumps ..... See 288
Base Plates 163
Beer and Ale Hand Pumps 279
Belt Carriers 174
Belt Conveyor Trippers 238
Belt Dressing 175
Belt Fasteners 176
Belt Lacing Machines 177
Belt Tighteners 178
Belting 167
  Canvas, Stitched and Cotton 168
  Chain or Link 169
  Hair 170
  Leather 171
  Rawhide 172
  Rubber 173
Bent Pipe 102
Blocks, Pillow 164
Blow Off Tanks 133
Blow Off Valves 141
Blowing Engines 22
Boiler Cleaners, Mechanical 48
  Flue or Tube 49
Boiler Compound Feeders 63
Boiler Feed Pumps ..... See 304
Boiler Feeders 62
Boiler Feeding Injectors 88
Boiler Gaskets ..... See 75
Boiler Oil Feeders 64
Boiler Test Pumps 309
Boiler Tube Expanders 60

Boilers 1
Flue 2
Horizontal Tubular, Portable ..... See 6
Horizontal Tubular, Stationary ..... See 6
House Heating 5
Locomotive, Tubular 9
Marine, Tubular 10
Marine, Water Tube ..... See 15
Return Flue ..... See 2
Return Tubular 11
Scotch Tubular 12
Tubular 6
Two Flue ..... See 2
Vertical Tubular, Portable ..... See 6
Vertical Tubular Stationary ..... See 6
Water Tube 15
Water Tube, Marine ..... See 15
Boxes or Frames, Wall 204
Brass Pipe Fittings 111
Brewery Pumps ..... See 304
Bridge Erecting Engines ..... See 30
Bushings 179
Camel's Hair Belting ..... See 170
Canvas Belting 168
Cast Iron Pipe 103
Cast Iron Pipe Fittings 112
Central Tank System Lubricators 92
Centrifugal Pumps 257
High Duty 258
Horizontal 259
Phosphate Dredging 260
Vertical 261
Chain Belting 169
Chain Pumps ..... See 278
Chains, Transmission ..... See 202
Check Valves 142
Chime Whistles 159
Chronometer Valves 143
Circular Grates 82
Circulating Pumps ..... See 257
Circulators, Feed Water 46B
Cistern Pumps ..... See 278
Clamp Couplings 191
Clamp Hub Pulleys 216
Clamps, Steam 47
Cleaners, Boiler, Mechanical 48
Cleaners, Flue or Tube 49
Clutch Shifting Mechanism 184
Clutches 180
Friction 181
Safety Three Part 182
Wood Split Pulley ..... See 227
Cocks, Gage 50
Collars 185
Plain Set 186
Safety Set 187
Columns, Water, Plain 51
Water, Safety 52

Compound Engines 23
Corliss ..... See 23
Compound Feeders, Boiler 63
Compression Couplings 192
Compressors, Air 243
Condensation Pumps ..... See 304
Condensers, Steam 53
Conveyor Trippers 238
Copper Floats 67
Cordage ..... See 228
Corliss Engines 24
Compound ..... See 23
Cotton Belting 40
Counters, Revolution 54
Countershafts 189
Couplings 190
Clamp 191
Compression 192
Flanged or Plate 193
Friction 194
Jaw or Clutch 195
Sleeve 196
Spiral Jaw 197
Square Jaw 198
Universal Joint 199
Vise 200
Wedge 201
Crank and Fly-Wheel Vacuum Pumps 314
Cups, Grease 94
Grease, Automatic 95
Oil 96
Oil, Sight Feed 97
Cut-Off Automatic Engines 20
Cut-Off Engines ..... See 20
Damper Regulators 120
Deck Engines ..... See 30
Deep Well Engines ..... See 252
Deep Well Pumps 252
Derrick Engines ..... See 30
Derricks 42
Diaphragm Hand Pumps 280
Direct Acting Pumps ..... See 304
Distillery Pumps ..... See 304
Double Arm Iron Pulleys 217
Dredging Pumps ..... See 304
Dressing, Belt 175
Drip Pumps ..... See 304
Driving Chains 202
Drop Hangers 210
Drums, Winding 241
Duplex Fly-Wheel Vacuum Pumps 316
Duplex Power Pumps 300
Duplex Steam Pumps 305
Duplex Vacuum Pumps 315
Duplex Vertical Plunger Pattern Marine Pumps 290
Duplex and Single Actuated Vacuum Pumps 317
Economizers, Fuel 55
Steam 56

Elevator Pumps 272
Eliminators ..... See 128
Engine Stops 130
Engines 17
Agricultural ..... See 36
Artesian and Deep Well ..... See 252
Automatic Cut-Off 20
Blowing 22
Compound 23
Compound Corliss ..... See 23
Corliss 24
Cut-Off ..... See 20
Deck ..... See 30
Derrick ..... See 30
Gas and Gasoline 29
High Speed, Automatic 21
Hoisting 30
Hydraulic 31
Locomotive 32
Marine 33
Oil 35
Portable 36
Pumping 244
Pumping, Hot Air 245
Reversing ..... See 30
Rolling Mill 39
Steering ..... See 34
Steering, Marine 34
Throttling 41
Traction 42
Triple Expansion 43
Turbine 43A
Vertical 44
Exhaust Heads 59
Expanders, Boiler Tube 60
Extractors, Grease 61
Facing Machines, Valve Seat 126
Fasteners, Belt 176
Feed Water Circulators 46B
Feed Water Filters 65
Feed Water Heaters 85
Feed Water Purifiers 117
Feed Water Regulators 121
Feeders, Boiler 62
Boiler, Compound 63
Boiler Oil 64
Fibrous Packing 99
Filter Press Pumps ..... See 304
Filters, Feed Water 65
Oil 66
Fire Pumps ..... See 304
Marine 291
Fittings, Pipe 110
Brass 111
Cast Iron 112
Malleable Iron 113
Fittings, Pipe Railing 114
Fittings, Straddle ..... See 110

Flange Pulleys 218
Flanged Couplings 193
Float Valves 144
Floats, Copper 67
Flue Boilers 2
  Return Flue ..... See 2
  Two Flue ..... See 2
Flue Scrapers ..... See 49
Flue Welding Machines 158
Flue or Tube Calipers 46A
Flue or Tube Cleaners 49
Fly Wheel Pulleys 219
Fly Wheels 203
Foot Valves 145
Force Feed Lubricators, Mechanical 93
Force Pumps ..... See 299
Frames or Boxes, Wall 204
Friction Clutch Pulleys 220
Friction Clutches 181
Friction Couplings 194
Fuel Economizers 55
Furnace Grates ..... See 81
Gage Cocks 50
Gage Glasses 76
Gages 68
  Draft 69
  Mercury 70
  Pressure Recording 71
  Steam 72
  Vacuum 73
  Water 74
Gas Engines 29
Gas Motors ..... See 29
Gaskets 75
Gasoline Engines 29
Gasoline Motors ..... See 29
Gate Valves 146
Geared Pumps ..... See 299
Gears 205
  Worm Wheel 206
Glasses, Gage 76
Globe Valves 147
Governors, Pump 77
  Steam Engine 78
  Water Wheel 79
Grate Bars 80
Grates, Dumping 81
  Oblong and Circular 82
  Rocking ..... See 84
  Shaking 84
Grease Cups 94
  Automatic 95
Grease Extractors 61
Grooved Pulleys 222
Grouting Pumps ..... See 278
Gum Packing 99
Hair Belting 170

Hand Pumps 278
Beer and Ale 279
Diaphragm 280
Painters' Oil 281
Porcelain Lined 282
Syphon 283
Wooden 284
Hangers 207
Ball and Socket, Adjustable 208
Bracket ..... See 166
Drop 210
Head Shaft 211
Post 212
Head Shaft Hangers 211
Heads, Exhaust 59
Heaters, Feed Water 85
High Duty Centrifugal Pumps 258
High Speed Automatic Engines 21
Horizontal Centrifugal Pumps 259
Horizontal Pumps ..... See 304
Horizontal Tubular Boilers, Portable ..... See 6
Stationary ..... See 6
Hot Air Pumping Engines 245
House Heating Boilers 5
House Pumps ..... See 278
Hoisting Engines 30
Indicators, Speed ..... See 54
Steam Engine 87
Injectors, Boiler Feeding 88
Inspectors' Test Pumps 311
Inspirators ..... See 88
Iron Pipe Fittings 112
Malleable 113
Jaw Couplings 195
Spiral 197
Square 198
Jet Steam Pumps 306
Journal Boxes 165
Leather Belting 171
Link Belting 169
Live Steam Superheaters 132
Locomotive Tubular Boilers 9
Loose Pulley Oilers 213
Low Water Alarms 46
Lubricators and Oiling Devices 90
Automatic 91
Automatic Grease Cups 95
Central Tank System 92
Force Feed, Mechanical 93
Grease Cups 94
Oil Cups 96
Sight Feed Oil Cups 97
Manhole Pumps ..... See 280
Marine Engines 33
Steering 34

Marine Pumps 288
Bilge 289
Duplex Vertical, Plunger Pattern 290
Fire 291
Ship Deck 292
Vertical, Air 293
Vertical, Piston 294
Marine Tubular Boilers 10
Water Tube Boilers ..... See 15
Mash Pumps 295
Mechanical Boiler Cleaners 48
Mechanical Lubricators, Force Feed 93
Mechanical Stokers 129
Melter Pan Pumps 296
Mercury Gages 70
Metallic Packing 100
Motors 44A
Gas and Gasoline ..... See 29
Pneumatic 44C
Water 44D
Oil Cups 96
Sight Feed 97
Oil Engines 35
Oil Feeders, Boiler 64
Oil Filters 66
Oil Pumps 297
Oilers, Loose Pulley, etc. 213
Oiling Devices ..... See 90
Packing 98
Gum, Fibrous, etc. 99
Metallic 100
Painters' Oil Hand Pumps 281
Paper Mill Pumps 298
Paper Pulleys 222A
Phosphate Dredging Centrifugal Pumps 260
Pillow Blocks 164
Pipe 101
Bent 102
Cast Iron 103
Riveted Steel 104
Spiral Riveted 105
Wooden 106
Wrought Iron 107
Pipe Fittings 110
Brass 111
Cast Iron 112
Malleable Iron 113
Pipe Railing Fittings 114
Plain Water Columns 51
Plain Whistles 160
Planimeters 116
Plates, Base 163
Pneumatic Motors 44C
Pop Valves ..... See 154
Porcelain Lined Hand Pumps 282
Portable Engines 36
Portable Tubular Boilers, Horizontal ..... See 6
Vertical ..... See 6

Post Hangers 212
Power Pumps 299
Duplex 300
Triplex 301
Power Vacuum Pumps 318
Power Transmission Appliances 161
Pressed Steel Pulleys 223
Pulleys 215
Clamp Hub 216
Double Arm Iron 217
Flange 218
Fly Wheel 219
Friction Clutch 220
Gallows or Guide 221
Grooved 222
Paper 222A
Pressed Steel 223
Single Arm or Plain 224
Split 225
Tight and Loose 226
Wood Split 227
Pump Governors 77
Pump Valves 150
Pumping Engines 244
Pumping Engines, Hot Air 245
Pumps 246
Acid ..... See 304
Admiralty ..... See 288
Aeropher 249
Air 250
Ammonia 251
Artesian and Deep Well 252
Automatic Pumps and Receivers 253
Automatic Steam Vacuum 313
Ballast ..... See 288
Beer and Ale 279
Bilge 289
Boiler Feed ..... See 304
Boiler Test 309
Brewery ..... See 304
Centrifugal 257
Chain ..... See 278
Circulating ..... See 257
Cistern ..... See 278
Condensation ..... See 304
Crank and Fly Wheel, Vacuum 314
Creamery ..... See 304
Diaphragm 280
Direct Acting ..... See 304
Distillery ..... See 304
Divers' 52
Dredging ..... See 304
Drip ..... See 304
Duplex, Power 300
Duplex Steam 305
Duplex Vacuum 315
Duplex Vertical Plunger, Marine 290
Electric 271

Pumps, continued.
Elevator ... 272
Fire ... See 304
Fire, Marine ... 291
Force ... See 299
Geared ... See 299
Grouting ... See 278
Hand ... 278
High Duty, Centrifugal ... 258
Horizontal ... See 304
Horizontal, Centrifugal ... 259
House ... See 278
Hydraulic Test ... 310
Inspectors' Test ... 311
Jet Steam ... 306
Manhole ... See 280
Marine ... 288
Mash ... 295
Melter Pan ... 296
Oil ... 297
Painters' Oil ... 281
Paper Mill ... 298
Phosphate Dredging ... 260
Porcelain Lined ... 282
Power ... 299
Power Vacuum ... 318
Rotary ... 302
Ship Deck ... 292
Single Fly Wheel Vacuum ... 323
Soap ... 303
Steam ... 304
Syphon ... 283
Test ... 308
Triplex, Power ... 301
Vertical Centrifugal ... 261
Vertical Piston, Marine ... 294
Vertical Steam ... 307
Windmill ... 324
Wooden, Hand ... 284
Railing Fittings, Pipe ... 114
Reducing Valves ... See 122
Reducing Wheels ... 118
Regulators ... 119
Damper ... 120
Feed Water ... 121
Pressure ... 122
Temperature ... 123
Re-heaters ... 124
Re-seating Machines, Valve ... 125
Return Flue Boilers ... See 2
Return Tubular Boilers ... 11
Reversing Engines ... See 30
Revolution Counters ... 54
Riveted Pipe, Spiral ... 105
Riveted Steel Pipe ... 104
Rope Sheaves ... See 222
Rope Transmission Wheels ... See 222
Rotary Pumps ... 302

Rubber Belting 173
Safety Pop Valves 154
Safety Set Collars 187
Safety Three Part Clutches 182
Safety Water Columns 52
Scotch Tubular Boilers 12
Scrapers, Flue or Tube ..... See 49
Separators, Steam 128
Shaft Oilers 213
Shafting 229
  Flexible 230
Shafting Bearings 162
Sheaves, Rope ..... See 222
Shifter Forks and Devices 232
Shifting Mechanism, Clutch 184
Ship Deck Pumps 292
Sight Feed Oil Cups 97
Single Arm or Plain Pulleys 224
Single Fly-Wheel Vacuum Pumps 323
Single Vacuum Pumps 322
Sleeve Couplings 196
Soap Pumps 303
Speed Indicators ..... See 54
Speed Transmission Devices 233
Spiral Jaw Couplings 197
Spiral Riveted Pipe 105
Split Pulleys 225
Sprocket Wheels 240
Square Jaw Couplings 198
Stationary Tubular Boilers, Horizontal ..... See 6
  Vertical ..... See 6
Steam Pumps 304
  Duplex 305
  Jet 306
  Vertical 307
Steam Separators 128
Steam Traps 136
Steel Pipe, Riveted 104
Stitched Belting 168
Stokers, Mechanical 129
Stops, Engine 130
Straddle Fittings ..... See 110
Superheaters 132
Syphon Pumps 283
Tanks, Steam, Blow-Off 133
Test Pumps 308
  Boiler 309
  Hydraulic 310
  Inspectors' 311
Three Part Safety Clutches 182
Tight and Loose Pulleys 226
Tighteners, Belt 178
Towers, Water Cooling 135
Traction Engines 42
Transmission Rope 228
Traps, Steam 136
Triple Expansion Engines 43
Triplex Power Pumps 301

Trippers, Belt Conveyor 238
Tube Calipers 46A
Tube Cleaners, Boiler 49
Tube Expanders, Boiler 60
Tube Scrapers ..... See 49
Tubular Boilers 6
Horizontal, Portable ..... See 6
Horizontal, Stationary ..... See 6
Locomotive 9
Marine 10
Return Tubular 11
Scotch 12
Vertical Portable ..... See 6
Vertical Stationary ..... See 6
Turbine Engines 43A
Two Flue Boilers ..... See 2
Vacuum Gages 73
Vacuum Pumps 312
Automatic Steam 313
Crank and Fly Wheel 314
Duplex 315
Duplex Fly Wheel 316
Duplex and Single Actuated 317
Power 318
Power Vertical Duplex 319
Single 322
Single Fly Wheel 323
Vertical Triplex 321
Valve Reseating Machines 125
Valve Seat Facing Machines 126
Valves 137
Air Automatic 138
Back Pressure 139
Balance 140
Blow-Off 141
Check 142
Chronometer 143
Float 144
Foot 145
Gate 146
Globe 147
Hydraulic 148
Pop ..... See 154
Pump 150
Radiator 151
Reducing ..... See 122
Safety Ball and Lever 153
Safety, Pop 154
Throttle 155
Water Relief 156
"Y" 157
Vertical Air Pumps, Marine 293
Vertical Centrifugal Pumps 261
Vertical Engines 44
Vertical Duplex Vacuum Pumps 319
Vertical Piston Marine Pumps 294
Vertical Single Vacuum Pumps 320
Vertical Steam Pumps 307

Vertical Triplex Vacuum Pumps 321
Vertical Tubular Boilers, Portable .....See 6
Stationary .....See 6
Vise Couplings 200
Wall Brackets 166
Wall Frames or Boxes 204
Water Columns, Plain 51
Safety 52
Water Cooling Towers 135
Water Gages 74
Water Relief Valves 156
Water Tube Boilers 15
Marine .....See 15
Water Wheel Governors 79
Wedge Couplings 201
Whistles, Chime 159
Plain 160
Winding Drums 241
Wind Mill Pumps..... 324
Wood Split Pulley Clutches .....See 227
Wood Split Pulleys 227
Wooden Hand Pumps..... 284
Wooden Pipe 106
Worm Wheel Gears 206
Wrought Iron Pipe 107
"Y" Valves 157

STEAM APPLIANCES.

1 BOILERS.

2 FLUE.

Allis-Chalmers Co., New York Life Bldg., Chicago, Ill.
American Road Machine Co., Kennett Square, Pa.
Ames Iron Works, Oswego, N. Y.
Armitage-Herschell Co., North Tonawanda, N. Y.
Aultman & Taylor Machinery Co., Mansfield, O.
Atlantic Works, 70 Border St., E. Boston, Mass.
Best, John (Estate of), Lancaster, Pa.
Bigelow Co., New Haven, Conn.
Biggs Boiler Works, Akron, O.
Birch, F. F., Dover, N. J.
Borger Bros. & Co., Columbus, O.
Clark Engine & Boiler Co., Kalamazoo, Mich.
Erie City Iron Works, Erie, Pa.
Fairbanks Co., Broome and Elm Sts., New York.
Fisher & Davis, 1024 N. Main St., St. Louis, Mo.
Freeman, S. & Sons, Mfg. Co., Racine, Wis.
Frost Mfg. Co., Galesburg, Ill.
Gem City Boiler Co., Dayton, O.
Herbert, M. E. Co., 240-252 Root St., Chicago, Ill.
Keeler, E., Company, Williamsport, Pa.
Kensington Engine Works, Ltd., 245 N. Broad St., Philda.
Kewanee Boiler Co., Kewanee, Ill.
Leffel, James & Co., Springfield, O.
McIlvain & Spiegel Boiler & Tank Co., Pearl & Lawrence Sts., Cincinnati, O.
Minneapolis Steel & Machinery Co., 2854 Minnehaha Ave., Minneapolis, Minn.
Munroe, R., & Son, Pittsburg, Pa.
Murray Iron Works Co., Burlington, Ia.
Nagle Boiler & Engine Co., Erie, Pa.
Neafie & Levy Ship & Engine Bldg. Co., 1336 Beach St., Philda.
Oil City Boiler Works, Oil City, Pa.
Pennsylvania Boiler Works, Erie, Pa.
Phoenix Iron Works Co., Meadville, Pa.
Rees, Jas., & Sons Co., Pittsburg, Pa.
Roberts Iron Works Co., Cambridgeport, Mass.
Russell, Jas., Boiler Works Co., Cor. C and 1st Sts., Boston.
Scioto Boiler Works, Columbus, Oo.
Springfield Boiler & Mfg. Co., Springfield, Ill.
Star Boiler Works, Clinton, Iowa.
Tudor Boiler Mfg. Co., Cincinnati, O.
Union Iron Wks., Erie, Pa.
Vilter Mfg. Co., Milwaukee, Wis.
Wallabout Steam Boiler Works, Wallabout St. and Wythe Ave., Brooklyn, N. Y.
Watertown Engine Co., Watertown, N. Y.
Williamson Bros., Richmond and York Sts., Philadelphia, Pa.

3 **Return Flue.** See 2, Flue Boilers.

4 **Two Flue.** See 2, Flue Boilers.

5 **HOUSE HEATING.** Low pressure boilers for heating purposes.

American District Steam Co., Lockport, N. Y.
American Radiator Co., Lake and Dearborn Sts., Chicago, Ill.
Ames Iron Works, Oswego, N. Y.
Archambo Heating Co., 219 S. 3d St., Minneapolis, Minn.
Armitage-Herschell Co., North Tonawanda, N. Y.
Bate, W. T., & Son, Conshohocken, Pa.
Belfield, H., & Co. 435 N. Broad St., Philadelphia, Pa.
Best, John (Estate of), Lancaster, Pa.
Bigelow Co., New Haven, Conn.
Birch, F. F., Dover, N. J.
Blake & Andros, 28 Portland St., Boston, Mass.
Borger Bros. & Co., Columbus, O.
Broomell, Schmidt & Steacy Co., York, Pa.
Brownell Co., Dayton, O. *See adv. page 105.*
Carman-Thompson Co., Lewiston, Me.
Coatesville Boiler Works, Coatesville, Pa.
Electric Boiler Co., Rochester, N. Y.
Fairbanks Co., Broome and Elm Sts., New York.
Farwell Heating Co., Atchison, Kan.
Gem City Boiler Co., Dayton, O.
Giblin & Co., Utica, N. Y.
Gorton & Lidgerwood Co., 96 Liberty St., New York.
Griffing, A. A., Iron Co., 449 Communipaw Ave., Jersey City.
Gurney Heater Mfg. Co., 74 Franklin St., Boston, Mass.
Harrisburg Mfg. & Boiler Co., Harrisburg, Pa.
Herendeen Mfg. Co., Geneva, N. Y.
Hopson & Chapin Mfg. Co., New London, Conn.
Hull, Camp Co., 127 Worth St., New York.
Ingalls & Hendrickson, 80 Sudbury St., Boston, Mass.
International Heater Co., Utica, N. Y.
Keeler, E., Company, Williamsport, Pa.
Kewanee Boiler Co., Kewanee, Ill.
Keystone Boiler & Radiator Co., Huntingdon, Pa.
Leffel, James, & Co., Springfield, O.
McIlvain & Spiegel Boiler & Tank Co., Pearl & Lawrence Sts., Cincinnati, O.
McLain, J. H., Co., Canton, O.
Magee Furnace Co., 32 Union St., Boston, Mass.
Model Heating Co., 716 Arch St., Philadelphia, Pa.
Monitor Steam Generator Mfg. Co., Landisville, Pa.
Mott, J. L., Iron Works, 88 Beekman St., New York.
Mulford Heater Co., Galva, Ill.
Nason Mfg. Co., 71 Fulton St., New York.
Newell Mfg. Co., 149 Broadway, New York.
New York Central Iron Works Co., Geneva, N. Y.
Norton, H. M., 2d and Northampton Sts., Easton, Pa.
Oil City Boiler Works, Oil City, Pa.
Page, Wm. H., Boiler Co., Norwich, Conn.
Parkhurst Compound Steam Boiler Co., Oswego, N. Y.
Prox & Brinkman Mfg. Co., Terre Haute, Ind.
Roberts Iron Works Co., Cambridgeport, Mass.
Rubel & Co., 82 Lake St., Chicago, Ill.
Russell, Jas., Boiler Works Co., Cor. C and 1st Sts., Boston.

BOILERS, HOUSE HEATING, continued.

Scioto Boiler Works, Columbus, O.
Smith, H. B., Co., Westfield, Mass.
Sotter Bros., Inc., Pottstown, Pa.
United States Heater Co., Detroit, Mich.
Walker & Pratt Mfg. Co., 31 Union St., Boston, Mass.

6 **TUBULAR.** On account of its size this list is arranged alphabetically by States.

ALABAMA.

Alabama Iron Works, Mobile, Ala.
Bailey Iron Works, Mobile, Ala.
Birmingham Boiler Works, Birmingham, Ala.
Continental Gin Co., Birmingham, Ala.
Hartley Boiler Works, Montgomery, Ala.
Home Industry Iron Works, Mobile, Ala.
Hood Machine Co., Birmingham, Ala.
Janney, A. A., & Co., Montgomery, Ala.
Lum Machinery Co., Montgomery, Ala.
Mahler & Ollinger, Mobile, Ala.
Means & Fulton Iron Works, Birmingham, Ala.
Peacock's Iron Works, Selma, Ala.
Strickland Bros. Machine Co., Tuscaloosa, Ala.
Union Iron Works, Selma, Ala.
Williamson Iron Co., Birmingham, Ala.

ARKANSAS.

Allen, W. J., Clarendon, Ark.
Breslin, C. J., Fort Smith, Ark.
Dilley Foundry Co., Pine Bluff, Ark.
Ketcham Iron Co., Fort Smith, Ark.
Little Rock Boiler Works, Little Rock, Ark.
Texas Steam Engine Works, Texarkana, Ark.
Wing-Sayle Foundry & Machine Co., Little Rock, Ark.
Wing & Stephens Co., Little Rock, Ark.

CALIFORNIA.

Brady, W. J., 113 Mission St., San Francisco, Cal.
Brode & Clark Iron Works, 621 Howard St., San Francisco.
Dundon, P. F., 223 Folsom St., San Francisco, Cal.
Dyer Bros., 360 2d St., San Francisco, Cal.
East Side Boiler Works, Oakland, Cal.
Finney, Thomas, San Diego, Cal.
Fulton Engine Works, Chavez and Queirolo Sts., Los Angeles.
Fulton Iron Works, San Francisco, Cal.
Hanke, August J., 119 Redondo St., Los Angeles, Cal.
Jackson, Byron, San Francisco, Cal.
Jardine Iron Works, 307 Folsom St., San Francisco, Cal.
Keystone Boiler Works, Main and Folsom Sts., San Francisco.
Langford Bros., Eureka, Cal.
Lemmer, J. C., 125 Fremont St., San Francisco, Cal.
Llewellyn Iron Works, Los Angeles, Cal.
McGinness, P. A., Fresno, Cal.
McGuffick, W. R., Stockton, Cal.
McGuire, Hugh, Marysville, Cal.
Moynihan, T. J., 311 Mission St., San Francisco, Cal.
Odermatt, Paul, 527 Brannan St., San Francisco, Cal.

CALIFORNIA, Continued.

Pacific Coast Boiler Works, 235 Main St., San Francisco, Cal.
Risdon Iron Works, San Francisco, Cal.
Root, Neilson & Co., Front St., Sacramento, Cal.
Sacramento Boiler & Iron Works, 113 L St., Sacramento, Cal.
Stockton Iron Works, Stockton, Cal.
Union Iron Works, San Francisco, Cal.
Union Iron Works, 406 E. First St., Los Angeles, Cal.
United Engineering Co., 254 Spear St., San Francisco, Cal.
United Iron Works, Oakland, Cal.
Wight, D., Pierce Ave., San Jose, Cal.

COLORADO.

Cleary, P. J., Larimer and 5th Sts., Denver, Colo.
Colorado Iron Works Co., Denver, Colo.
Davis, F. M., Iron Works, Denver, Colo.
Denver Boiler & Sheet Iron Works Co., Denver, Colo.
Denver Engineering Works Co., Denver, Colo.
McCarty & Moore, Leadville, Colo.
Mine & Smelter Supply Co., Denver, Colo.
Owen, E. S., Pueblo, Colo.
Stearns-Roger Mfg. Co., Denver, Colo.
Stroehle, D., & Son, Black Hawk, Colo.
Wich, John, Denver, Colo.
Wood & Dingley, Trinidad, Colo.
Young, John, 2245 Blake St., Denver, Colo.

CONNECTICUT.

Beach, H. B., & Son, Hartford, Conn.
Bigelow Co., New Haven, Conn.
Bridgeport Boiler Works, Bridgeport, Conn.
Drummond, Thomas, New London, Conn.
Morgan Iron Works, New London, Conn.
Putnam Foundry & Machine Corp., Putnam, Conn.
Skidmore, P. H., & Sons, Bridgeport, Conn.

DELAWARE.

Harlan & Hollingsworth Co., Wilmington, Del.
Pusey & Jones Co., Wilmington, Del.

DISTRICT OF COLUMBIA.

Forsberg & Murray, 526 13th St. N. W., Washington, D. C.
Gray, E. N., & Co., 316 Main Ave. S. W., Washington, D. C.

FLORIDA.

Gulf Boiler & Mch. Works, Tampa, Fla.
Hughes, James, Jr., Pensacola, Fla.
Parcell, Frank, Tampa, Fla.
Pensacola Fdry. & Boiler Works, Pensacola, Fla.

GEORGIA.

Columbus Iron Works, Columbus, Ga.
Davis & Forrest, 307 Bay St., W., Savannah, Ga.
Findlay Iron Works, Macon, Ga.
Finnigan, J. J., & Co., 22 Means St., Atlanta, Ga.
Lombard Iron Works and Supply Co., Augusta, Ga.
McDonough & Ballantyne, 238 E. Broad St., Savannah, Ga.

GEORGIA, Continued.

Mallary & Taylor Iron Works, Macon, Ga.
Mingledorff & Co., 510 Indian St., Savannah, Ga.
Pekor Iron Works, Columbus, Ga.
Ray Iron Works, Brunswick, Ga.
Rourke, John, & Son, 634 Bay St., E., Savannah, Ga.
Schofield, J. S., Sons Co., Macon, Ga.
Valdosta Fdry. & Mch. Co., Valdosta, Ga.

ILLINOIS.

Allis-Chalmers Co., New York Life Bldg., Chicago, Ill.
Aurora Boiler Works, Trask St. and Dearborn Ave., Aurora, Ill.
Berry, John, 25 No. Green St., Chicago, Ill.
Bloomington Steam Boiler Wks., 216 E. Market St., Bloomington, Ill.
Brass Foundry & Heating Co., 105 Franklin St., Peoria, Ill.
Brunner Chas., Peru, Ill.
Butman Boiler Furnace Co., Monadnock Blk., Chicago, Ill.
Chesley Bros., Danville, Ill.
Corbett, Geo. E., 15 Chicago Ave., Chicago, Ill.
Drake, Wm., Springfield, Ill.
Dube, John, 979 73d St., Chicago, Ill.
Duncan Fdry. & Mch. Wks., 5th and Piasa St., Alton, Ill.
Eclipse Mche. & Boiler Wks., 1146-1148 W. 14th St., Chicago.
Haffner, Charles, 907 So. Halsted St., Chicago, Ill.
Hamler Boiler & Tank Works, 39th and Halsted Sts., Chicago.
Hawley Down Draft Furnace Co., 59 Townsend St., Chicago.
Heggie Bros., Joliet, Ill.
Hibben & Co., 9376 Ewing Ave., So. Chicago, Ill.
Illinois Bridge & Machine Co., Jacksonville, Ill.
Illinois Steam Boiler Works, 715 Carroll Ave., Chicago, Ill.
Jones, W. B., Streator, Ill.
Kaestner, Chas., & Co., 241 S. Jefferson St., Chicago, Ill.
Kewanee Boiler Co., Kewanee, Ill.
Kickham Bros., 430 Broadway, E. St. Louis, Ill.
Kling Bros., 287 Hawthorne Ave., Chicago, Ill.
Krier, Nicholas, 1422 No. Marshfield Ave., Chicago, Ill.
Kroschell Bros. Co., 59 E. Erie St., Chicago, Ill.
Loudon, R., 620 No. Main St., Bloomington, Ill.
McAleenan Boiler Co., Peoria, Ill.
McCarren, James, 119 So. Water St., Rockford, Ill.
McFarland, G., & Co., 53d and Clark Sts., Chicago, Ill.
McGarry, Patrick, 1175 S. Paulina St., Chicago, Ill.
McGregor, G. L., 246 So. Clinton St., Chicago, Ill.
McNeil, J. C., Co., 279 Dearborn St., Chicago, Ill.
Maloney, Patrick, 1000 Commercial Ave., Cairo, Ill.
Mathews Down Draft Boiler Co., Chicago, Ill.
Michelman Boiler Co., Quincy, Ill.
Mohr, John, & Sons, 32 Illinois St., Chicago, Ill.
Morgan Boiler Co., 40 Dearborn St., Chicago, Ill.
Murphy & Walsh, Pekin, Ill.
National Boiler Works, 60 Fulton St., Chicago, Ill.
Oakes, William L., Decatur, Ill.
Pfeiffer, Chris., 68 Michigan St., Chicago, Ill.
Pickham, Thomas F., 53 W. 14th Place, Chicago, Ill.
Pratt, Henry, Boiler & Machine Co., 869-877 S. Halsted St., Chicago, Ill.

ILLINOIS, Continued.

Quincy Boiler Co., Quincy, Ill.
Ross, James, 4061 La Salle St., Chicago, Ill.
Savill, J. M., & Sons, Canton, Ill.
Schillinger, M., 816 R.R. Ave., Moline, Ill.
Schneider, Nicholas, 279 Dearborn St., Chicago, Ill.
Sharkey & Peck, 58 Law Ave., Chicago, Ill.
South Side Boiler Works, 553 35th St., Chicago, Ill.
Springfield Boiler & Mfg. Co., Springfield, Ill.
Sullivan, John J., 204 Dearborn St., Chicago, Ill.
Sullivan Machinery Co., 135 Adams St., Chicago, Ill.
Van Sicklen, Alex., & Co., 8 So. Canal St., Chicago, Ill.
Warrington, George, Ft. of W. Wellington St., Chicago, Ill.
Weiler & Smith, 129-133 W. Superior St., Chicago, Ill.
Westwick, John, & Son, Galena, Ill.
Wildman Boiler Works, 1274-1280 W. 12th St., Chicago, Ill.
Williams, E. O., 63 So. Clinton St., Chicago, Ill.

INDIANA.

American Boiler & Sheet Iron Co., 740 W. Washington St., Indianapolis, Ind.
Atlas Engine Works, Indianapolis, Ind.
Bass Foundry & Mch. Co., Hanna St., Fort Wayne, Ind.
Broderick-Quinlan Mfg. Co., Montpelier, Ind.
Carpenter, G. Albert, Muncie, Ind.
Chandler & Taylor Co., Indianapolis, Ind.
Cruse & Connaughton, 534 S. Capitol Ave., Indianapolis, Ind.
Elmer & McAllister, Logansport, Ind.
Emery, John H., & Co., Terre Haute, Ind.
Fort Wayne Foundry & Mch. Co., Fort Wayne, Ind.
Gaar, Scott & Co., Richmond, Ind.
Grote Mfg. Co., Evansville, Ind.
Gruber, F. J., Barr, near E. Superior St., Fort Wayne, Ind.
Hegewald, C., & Co., New Albany, Ind.
Henry, Charles, Madison, Ind.
Hogan, J. F., & Co., Marion, Ind.
Johnson Fdry. & Machine Shops, Madison, Ind.
Keck, Gonnerman & Co., Mt. Vernon, Ind.
Kennedy, P. W., 1131 Beecher St., Indianapolis, Ind.
Korstad, A. P., 40 Poplar St., Terre Haute, Ind.
Lawton Mfg. Co., Wabash, Ind.
Lyle & Reynolds, Crawfordsville, Ind.
McGrath, Robert H., Lafayette, Ind.
McKenzie & Diamond, Elwood, Ind.
Marion Co-operative Machine & Boiler Works, Marion, Ind.
Matthews Steam Boiler Works Co., South Bend, Ind.
National Boiler Co., 1024 Dover St., Indianapolis, Ind.
O'Meara, Henry F., Muncie, Ind.
Pelz, William, Evansville, Ind.
Heilman Machine Works, Evansville, Ind.
Reeves & Co., Columbus, Ind.
Richmond Machine Works, Richmond, Ind.
Robinson & Co., Richmond, Ind.
Rumely, M., Co., La Porte, Ind.
Sweeney, M. A., Co., Jeffersonville, Ind.
Terre Haute Boiler Works Co., Terre Haute, Ind.
Vanes, John, Brazil, Ind.
Walsh, Edward, Marion, Ind.

IOWA.

American Iron Works, Des Moines, Iowa.
Brown Bros., Eldora, Iowa.
Des Moines Mfg. & Supply Co., 101 E. Court Ave., Des Moines, Iowa.
Eagle Iron Works, 301 E. Court Ave., Des Moines, Iowa.
Fair-Williams Bridge & Mfg. Co., Ottumwa, Iowa.
Furlong, Henry, 214 E. First St., Des Moines, Iowa.
Garren & Hines, Muscatine, Iowa.
Grupe, Durbin & Son, 317 E. 2d St., Davenport, Iowa.
Harrington's Foundry, Oskaloosa, Iowa.
Iowa Iron Works Co., Dubuque, Iowa.
McDaniel, C. E., 219 S. Wapello St., Ottumwa, Iowa.
McElroy Iron Works Co., 19 S. 9th St., Keokuk, Iowa.
Marshall, William, 10th and Washington Sts., Dubuque, Iowa.
Morrison Bros., 501 Iowa St., Dubuque, Iowa.
Mullin, Jerry, 325 N. 3d St., Cedar Rapids, Iowa.
Murray Iron Works Co., Burlington, Ia.
Mussett & Wright, Waterloo, Iowa.
Pidduck & Spencer, Sioux City, Iowa.
Roche, W. F., Boone, Iowa.
Sioux City Boiler & Sheet Iron Works, Sioux City, Iowa.
Star Boiler Works, Clinton, Ia.
Turner & Brownlie, 300 E. Court Ave., Des Moines, Iowa.
Vance & Meyers, Muscatine, Iowa.

KANSAS.

Bromich, Joseph, Topeka, Kan.
Ehrsam, J. B., & Sons Mfg. Co., Enterprise, Kan.
Fort Scott Fdry. & Mch. Works, Fort Scott, Kan.
Guldaman Bros., Wichita, Kan.
McNally Thomas, Pittsburg, Kan.
Newsome, Joseph (Estate of), 217 Choctaw St., Leavenworth, Kan.

KENTUCKY.

Geiger, Fisk & Koop, 725 E. Main St., Louisville, Ky.
Mitchell, John, & Co., 312 11th St., Louisville, Ky.
Mitchell, Thomas, Jr., 1713 W. Main St., Louisville, Ky.
Vogt, Henry, Machine Co., Louisville, Ky.

LOUISIANA.

Connell, J. D., Iron Works, New Orleans, La.
Dummet, Frederick, 1532 Perrilliat St., New Orleans, La.
Frederick, George, foot of North St., Baton Rouge, La.
Jeffrey, Daniel, Jeanerette, La.
Johnson Iron Works, Julia and Water Sts., New Orleans, La.
Kelly, James, 728 Magazine St., New Orleans, La.
Murphy's, John H., Iron Wks., Magazine & Girod Sts., New Orleans, La.
Payne & Joubert, 423 Carondelet St., New Orleans, La.
Thibodaux Boiler Works Co., Thibodaux, La.
Whitney Iron Works, St. Joseph St., New Orleans, La.

MAINE.

Bath Iron Works, Bath, Me.
Camden Anchor Rockland Machine Co., Rockland, Me.
Portland Co., Inc., Portland, Me.
Union Iron Works, 15 Oak St., Bangor, Me.

MARYLAND.

Baltimore Marine Railway Machine & Boiler Works, Baltimore, Md.
Baltimore Ship Building & Dry Dock Co., Locust Point, Baltimore, Md.
Bartlett, Hayward & Co., Continental Trust Bldg., Baltimore.
Basshor, T. C., Co., Baltimore, Md.
Cathell Bros., 706 Covington St., Baltimore, Md.
Clark, James, Co., Foot of Webster St., Baltimore, Md.
Codd, E. J., Co., Baltimore, Md.
Coleman, John T., 407 E. Saratoga St., Baltimore, Md.
Crock, Horner & Co., 301 N. Howard St., Baltimore, Md.
Ellicott Machine Co., Bush and Paca Sts., Baltimore, Md.
Flynn & Emrich, Union Trust Bldg., Baltimore, Md.
Murray, James, & Son, 106 E. York St., Baltimore, Md.
Renneburg, Edward, & Son, 1919 Aliceanna, St., Baltimore, Md.
Schaffer Boiler & Engine Mfg. Co., 327 N. Calvert St., Baltimore, Md.
Triplett & Jennings, 102 E. York St., Baltimore, Md.

MASSACHUSETTS.

Atlantic Works, 70 Border St., E. Boston, Mass.
Brown, James H., & Co., Salem, Mass.
Burlingame, A., Co., Worcester, Mass.
Campbell, William, & Co., Cambridge, Mass.
Coghlan's Steam Boiler Works, Holyoke, Mass.
Cunningham Iron Co., Congress, Cor. B St., Boston, Mass.
Dillon, David M., Fitchburg, Mass.
Fore River Engine Co., Quincy, Mass.
Hannan & Finton, Springfield, Mass.
Hawkins, R. F., Iron Works, Springfield, Mass.
Hodge Boiler Works, Summer and N. Ferry Sts., Boston, Mass.
Kelley, Edward, Oil Works Wharf, Fall River, Mass.
Kendall, Edward, & Sons, Cambridge, Mass.
McCabe, Edward, & Son, Lawrence, Mass.
McLauthlin, George T., 120 Fulton St., Boston, Mass.
New Bedford Boiler & Machine Co., New Bedford, Mass.
Percy, C. W., 212 Summer St., Boston, Mass.
Rawson & Morrison Mfg. Co., Cambridgeport, Mass.
Riverside Boiler Works, Boston, Mass.
Roberts Iron Works Co., Cambridgeport, Mass.
Robinson, A. F., Boiler Works, Cambridge, Mass.
Russell, Daniel, Boiler Works, 77 Dorchester Ave., Boston.
Russell, Jas., Boiler Works Co., cor. C & 1st Sts., Boston, Mass.
Scannell & Sons, 26 Tanner St., Lowell, Mass.
Stewart, C., & Son, Boiler Works, Worcester, Mass.
Sylvester, F., & Co., Gloucester, Mass.
Walsh Boiler & Iron Works, Springfield, Mass.
Walsh, W. J., Mechanic St., Holyoke, Mass.

MICHIGAN.

Bartlett, A. F., & Co., Saginaw, Mich.
Bay City Boiler Co., Bay City, Mich.
Bay City Iron Co., Bay City, Mich.
Brandel, John H., Owosso, Mich.
Brennan, John, & Co., Detroit, Mich.
Brobst, Henry, 530 Canal St., Grand Rapids, Mich.
Buchner, William, Adrian, Mich.

MICHIGAN, Continued.

Clark Engine & Boiler Co., Kalamazoo, Mich.
Cole, W. T., Ishpeming, Mich.
Comstock Mfg. Co., Comstock, Mich.
Crowley, John, Jackson, Mich.
Cuddy, M. J., Escanaba, Mich.
Davis, John H., Ludington, Mich.
Davis, William T., & Co., Battle Creek, Mich.
Decker & Kaiser, Adrian, Mich.
Desner & Ritchie, 11 St. Aubin Ave., Detroit, Mich.
Dry Dock Iron Works, Port Huron, Mich.
Dutton, C. H., Co., Kalamazoo, Mich.
Eureka Boiler Co., Saginaw, Mich.
Fernstrum, Frank G., Menominee, Mich.
Flooring & Kane, Adrian, Mich.
Garske, August, Kalamazoo, Mich.
Grand Rapids Boiler Works, Grand Rapids, Mich.
Hayes, William, Cadillac, Mich.
Isbell, J. W., St. Joseph, Mich.
Jack, Andrew, Manistee, Mich.
Jackson & Church Co., Saginaw, Mich.
Jarvis Engine & Machine Works, 203 Grand St. S., Lansing, Mich.
Jenks Shipbuilding Co., Port Huron, Mich.
Johnston Bros., Ferrysburg, Mich.
Keeley, James J., Jackson, Mich.
Lake Shore Engine Works, Marquette, Mich.
Leitelt, Adolph, Iron Works, Grand Rapids, Mich.
McGregor, James, Cheboygan, Mich.
MacKinnon Mfg. Co., 230 N. Water St., Bay City, Mich.
Maher, Michael, 400 N. Water St., Bay City, Mich.
Manistee Iron Works Co., Manistee, Mich.
Montague Iron Works, Montague, Mich.
Mummery, D., Stanton, Mich.
Muskegon Boiler Works, Muskegon, Mich.
Oliver, John, Alpena, Mich.
Portage Lake Boiler Works, Hancock, Mich.
Pratt, Stephen, Foundry St., Detroit, Mich.
Richmond & Holmes, St. John, Mich.
Sprenger, Joseph, & Sons, 1194 River St., Detroit, Mich.
Standard Foundry Co., Detroit, Mich.
Tunnel City Boiler Works, Port Huron, Mich.
Van Camp & Nagel, Owosso, Mich.
Wickes Bros., Saginaw, Mich.
Wright, Archibald M., Port Huron, Mich.

MINNESOTA.

Bros, William, Boiler & Mfg. Co., Lower Nicollet Island, Minneapolis, Minn.
Crown Iron Works Co., 115 Second Ave., S. E., Minneapolis.
Doran, James, Stillwater, Minn.
Enterprise Machine Co., 423 S. 4th St., Minneapolis, Minn.
Gilmore, J. K., Co., 200 Lyndale Ave., N., Minneapolis, Minn.
Gogebic Steam Boiler Works, Duluth, Minn.
Howell, R. R., & Co., Minneapolis, Minn.
Kenny Bros., 339 E. 4th St., St. Paul, Minn.
Lambrix Bros., 505 13th Ave., S., Minneapolis, Minn.

MINNESOTA, Continued.

Minneapolis Steel & Machinery Co., 2854 Minnehaha Ave., Minneapolis, Minn.
Northwestern Steam Boiler Works, Duluth, Minn.
Roberts-Goss Co., 4th and Pine Sts., St. Paul, Minn.
South Park Foundry & Machine Co., St. Paul, Minn.
Vulcan Boiler Works, Water and Walter Sts., St. Paul, Minn.

MISSISSIPPI.

Adams, W. T., Machine Co., Corinth, Miss.
Foley, P. J., & Son, 206 N. Mulberry St., Vicksburg, Miss.
Martin Machine Works, Meridian, Miss.
Robinson, B. J., Vicksburg, Miss.

MISSOURI.

Augustine, T. C., 611 Batee St., St. Joseph, Mo.
Brooks, James, Moberly, Mo.
Darby, Isaac H., 506 W. 5th St., Kansas City, Mo.
Fisher & Davis, 1024 N. Main St., St. Louis, Mo.
Freeman Foundry & Machine Works, Joplin, Mo.
Fritz, Geo. J., Foundry & Machine Co., St. Louis, Mo.
Fulton Iron Works, St. Louis, Mo.
Geis & Bichler, 1005 S. 8th St., St. Joseph, Mo.
Johnson, John O., 1301 Joplin St., Joplin, Mo.
Merton, D. S., & Co., 412 S. 6th St., St. Louis, Mo.
Nooter, John, Boiler Works Co., 816 N. Main St., St. Louis, Mo.
Palmer, George W., 417 W. 5th St., Kansas City, Mo.
Parsons, J. W., Louisiana, Mo.
Price & Leverett, Joplin, Mo.
Rohan, John, & Son, Boiler Works Co., Lewis and Biddle Sts., St. Louis, Mo.
Ryan Bros., 811 N. Levee St., St. Louis, Mo.
Sergeant, W. C., & Co., 306 Jackson Ave., Joplin, Mo.
Stark, Henry, Joplin, Mo.
United Iron Works Co., Springfield, Mo.
Urie Boiler & Machine Co., Kansas City, Mo.
Verbarg, C. H., 2830 S. 3d St., St. Louis, Mo.
Wangler, Joseph F., Boiler & Sheet Iron Works, 1547 N. 9th St., St. Louis, Mo.
Webb City Iron Works, Webb City, Mo.
Western Boiler & Sheet Iron Works, 240 Dickson St., St. Louis.

MONTANA.

Great Falls Iron Works, Great Falls, Mont.

NEBRASKA.

Drake-Wilson-Mount Co., Omaha, Neb.
Lincoln Steam Boiler & Sheet Iron Works, Lincoln, Neb.
Lowrey, John R., Omaha, Neb.
Smith, R. L., Machine Works, Lincoln, Neb.

NEW HAMPSHIRE.

Exeter Machine Works, Exeter, N. H.
Hutchinson's, Chas. H., Foundry & Machine Works, Manchester, N. H.
Spence & Rideout, Nashua, N. H.

BOILERS.

New Jersey.

Ball, Charles C., 148 N. J. R.R. Ave., Newark, N. J.
Birch, F. F., Dover, N. J.
Brown & Miller, Foot of Morris St., Jersey City, N. J.
Connelly, T. P., Foot of Morris St., Jersey City, N. J.
Currier, Cyrus, & Sons, Newark, N. J.
Dialogue, John H., & Sons, Camden, N. J.
Fletcher, W. & A., Co., 12th and Hudson Sts., Hoboken, N. J.
Hartung & Adam, Newark, N. J.
Hayes Mfg. Co., Paterson, N. J.
Hewes & Phillips Iron Works, Newark, N. J.
Lambert Hoisting Engine Co., Newark, N. J.
MacKenzie, Duncan & Sons, Trenton, N. J.
Mundy, J. S., 22 Prospect Street, Newark, N. J.
Nixon, Lewis, Elizabeth, N. J.
Prospect Boiler Co., New Brunswick, N. J.
Seymour & Whitlock, Newark, N. J.
Sipp Electric & Machine Co., Paterson, N. J.
Smith, Theodore, & Sons, Foot of Essex St., Jersey City, N. J.
Spracklin Boiler & Machine Co., Trenton, N. J.
Thropp, J. E., & Sons, Foot of Lewis St., Trenton, N. J.
Thropp, W. P., E. State St., Trenton, N. J.
Tippett & Wood, Phillipsburg, N. J.
Watson, J., 1 Fair St., Trenton, N. J.

New York.

Ahern, D., & Co., 263 South St., New York.
Ames Iron Works, Oswego, N. Y.
Armitage-Herschell Co., North Tonawanda, N. Y.
Atlantic Basin Iron Works, Summit and Imlay Sts., Brooklyn.
Babcock & Wilcox Co., 85 Liberty St., New York. *See adv. page 7.*
Bacon, Earle C., 26 Cortlandt St., New York.
Barber Bros., 500 E. Water St., Syracuse, N. Y.
Boes, Henry J., 487 E. 138th St., New York.
Brown, Francis A., Lockport, N. Y.
Bryson, R., & Son, 161 Mill St., Pulaski, N. Y.
Carroll Bros. Boiler Works, 87 W. 2d St., Oswego, N. Y.
Catchpole Boiler Fdy. & Mch. Co., 23 Jackson St., Geneva, N. Y.
Collins, John H., 20 Walnut St., Amsterdam, N. Y.
Collins, William P., & Son, Long Island City, N. Y.
Columbia Engineering Works, William and Imlay Sts., Brooklyn, N. Y.
Conklin, C. W., 48-50 Washington St., Auburn, N. Y.
Cunningham, Christopher, Greenpoint Ave., Brooklyn, N. Y.
Dederick's, P. K. Sons, Albany, N. Y.
Delaney, Patrick, & Co., Colden and Renwick Sts., Newburg, N. Y.
Dobbie Foundry & Machine Co., Niagara Falls, N. Y.
Donohue's, Peter J., Sons, Wythe Ave. & Wallabout St., Brooklyn, N. Y.
Electric Boiler Co., Pulaski, N. Y.
Elmira Boiler Works, Elmira, N. Y.
Enderlin, Joseph, Jr., & Co., 49 N. 6th St., Brooklyn, N. Y.
Fitzgibbons Boiler Co., Cor. E. 10th and DeWitt Sts., Oswego, N. Y.
Fogarty, Michael, & Bro., 533 W. 33d St., New York.

NEW YORK, Continued.

Franklin Machine & Steam Boiler Works, 13 Franklin St., Brooklyn, N. Y.
Gas Engine & Power Co. & Chas. L. Seabury & Co., Morris Heights, N. Y.
Gilroy, James J., Ft. 24th St., Brooklyn, N. Y.
Green, P. F., 67 Church St., Albany, N. Y.
Hagan Boiler Wks., East Ave. and Newtown Creek, Long Isl and City, N. Y.
Hall & Hulbert, Ft. 24th St., Brooklyn, N. Y.
Hall's, Sidney, Son, 175 Mill St., Pulaski, N. Y.
Hatflinger, John, 46 Reid St., Amsterdam, N. Y.
Heipershausen Bros., 43 Tompkins St., New York.
Hennessy, Dennis, 423 S. West. St., Syracuse, N. Y.
Holly Mfg. Co., Lockport, N. Y.
Howard & Roberts, 21 Indiana St., Buffalo, N. Y.
Jamestown Boiler Works, Jamestown, N. Y.
Kane, John, Nyack, N. Y.
Kingsford Foundry & Machine Co., Oswego, N. Y.
Kipp, Abram, Ossining, N. Y.
Lake Erie Boiler Works, Chicago, cor. Perry Sts., Buffalo.
Lake Erie Engineering Works, Buffalo, N. Y.
Lidgerwood Mfg. Co., 96 Liberty St., New York.
Logan Iron Works, 56 Commercial St., Brooklyn, N. Y.
McEntree, John, 113 E. Strand St., Kingston, N. Y.
Mack Bros., 407 Marcellus St., Syracuse, N. Y.
Mahar, John, Tonawanda, N. Y.
Marceau, C., 30 Main St., Ogdensburg, N. Y.
Mitchell Co., 621 W. 24th St., New York.
Morgan Iron Works, Ft. E. 9th St., New York.
Morse Iron Works & Dry Dock Co., Ft. 58th St., Brooklyn, N. Y.
Mott, J. L., Iron Works, 88 Beekman St., New York.
New Jersey Foundry & Machine Co., 9 Murray St., New York.
New York Central Iron Works, Geneva, N. Y.
Nichols, D. M., 2 Gouverneur Slip, New York.
Novelty Steam Boiler Works, Greenpoint Ave. and Newtown Creek, Brooklyn, N. Y.
O'Hanlon, Thomas, & Sons, 4 Pine St., Utica, N. Y.
Oldman Boiler Works, 29 Burwell Pl., Buffalo, N. Y.
Olmstead, A. E., Pulaski, N. Y.
Parkhurst Compound Steam Boiler Co., Oswego, N. Y.
Payne Engineering Co., 141 Broadway, New York.
Perry, John W., & Son, 416 Canal St., Syracuse, N. Y.
Pierce, Butler & Pierce Mfg. Co., 118 S. Clinton St., Syracuse, N. Y.
Pinkerton & Mull, Green Island, N. Y.
Pioneer Iron Works, 149 William St., Brooklyn, N. Y.
Queen City Engineering Co., Perry, cor. Mississippi Sts., Buffalo, N. Y.
Queens Borough Boiler Wks., 14 7th St., Long Island City, N. Y.
Quintard Iron Works, 712 E. 12th St., New York.
Raab Iron Works, Ft. 26th St., Brooklyn, N. Y.
Reddy's, M., Sons, Little Falls, N. Y.
Reilly, James, Repair & Supply Co., 230 West St., New York.
Ross Iron Works, Ft. 27th St., Brooklyn, N. Y.
Shapley & Wells, Binghamton, N. Y.
Skinner & Arnold Co., 205 Broadway, Albany, N. Y.

NEW YORK, Continued.

Smith, Albert, & Son, 687 11th Ave., New York.
Steam Boiler Equipment Co., 20 W. Houston St., New York.
Steam Carriage Boiler Co., 119 W. 1st St., Oswego, N. Y.
Sullivan, John W., 384 South St., New York.
Sutherland & Kelly, 7th Ave. and North St., Troy, N. Y.
Syracuse Boiler & Sheet Iron Works, 610 E. Water St., Syracuse, N. Y.
Tashenberg, Wm. M., & Co., 27 Washington St., Buffalo, N. Y
Thayer & Co., 39 Cortlandt St., New York.
Utica Steam Engine & Boiler Works, Utica, N. Y.
Vance Boiler Works, Near Lehigh Valley Station, Geneva, N. Y.
Vandenberg, Frederick B., 23 Burt Ave., Auburn, N. Y.
Vanderbogart, J. H., Watervliet, N. Y.
Vulcan Iron Works, 138 W. 2d St., Oswego, N. Y.
Wallabout Steam Boiler Works, Wallabout St. and Wythe Ave., Brooklyn, N. Y.
Walsh, Stephen S., 173 Lancaster St., Albany, N. Y.
Warner Safety Boiler Co., Oneida, N. Y.
Watertown Engine Co., Watertown, N. Y.
White, Robert, Eng. Wks., Ft. Columbia St., Brooklyn, N. Y.

NORTH CAROLINA.

Liddell Co., Charlotte, N. C.
Mecklenburg Iron Works, Charlotte, N. C.
Salem Iron Works, Salem, N. C.
Tompkins, D. A., Co., 25 S. Church St., Charlotte, N. C.

OHIO.

Adams Bros. Co., Findlay, O.
Aultman & Taylor Mchy. Co., Mansfield, Ohio.
Aultman Co., Canton, Ohio.
Barnes, Charles, Co., 53 Main St., Cincinnati, O.
Bellaire Boiler & Structural Iron Works, Bellaire, O.
Biggs Boiler Works Co., Akron, O.
Borger Bros. & Co., Broad & Scioto Sts., Columbus, Ohio.
Brownell Co., Dayton, Ohio. *See adv. page 3.*
Buckeye Boiler Co., 314 E. Necom Ave., Dayton, O.
Byers, John F., Machine Co., Ravenna, O.
Cady, A. L., Steubenville, O.
Canty, John F., Tiffin, O.
Colley & Finley Iron Works, 500 S. Main St., Lima, O.
Craig Shipbuilding Co., Craig and Front Sts., Toledo, O.
Crampton & Son, Covington, O.
Dover Boiler Works, Canal Dover, O.
Enterprise Boiler Co., 249 Market St., Youngstown, O.
Farasey, Jas. D., & Co., Forest St., near Erie R. R., Cleveland.
Fassett, J. E. & Co., Wellsville, O.
Forest City Boiler Co., 117 River St., Cleveland, O.
Fritsch, F., Mfg. Co., 223 W. McMicken Ave., Cincinnati, O.
Gem City Boiler Co., Dayton, Ohio.
Graves & Marshall, 401 E. First St., Dayton, O.
Griffith, C. M., Boiler Works, Bradner, O.
Houston, Stanwood & Gamble, Cincinnati, Ohio.
Huber Mfg. Co., Marion, Ohio.
Jones, Robert, & Co., Pearl and Ludlow Sts., Cincinnati, O.
June, D., & Co., Fremont, O.
Keenan, J. J., & Sons, Elm, cor. Hemlock St., Cleveland, O.

OHIO, Continued.

Kuhn, D. R., Norwalk, O.
Leffel, Jas., & Co., Springfield, Ohio.
Leetonia Boiler Co., Leetonia, O.
Limbaugh & O'Connor, Tiffin, O.
Loos, Adam, 139 S. Erie St., Toledo, O.
Lucas, C. O., & Co., Greenville, O.
McArthur, George, Findlay, O.
McIlvain & Spiegel Boiler and Tank Co., Pearl and Lawrence Sts., Cincinnati, Ohio.
McKinnon, W. S., Ashtabula Harbor, O.
McNamara, J. D., Machine Works, Newark, O.
Maher & Hirsh, 51 Main St., Cleveland, O.
Marietta Boiler Works, Marietta, O.
Marine Boiler Works, Front and York Sts., Toledo, O.
Meehan Boiler and Construction Co., Lowellville, O.
Murphy & Donnelly Boiler Co., 20 Elm St., Cleveland, O.
Niles Boiler Co., N. Main St., and Erie R. R., Niles, O.
Novelty Iron Co., Canton, O.
Olive Foundry & Machine Co., 107 N. 2d St., Ironton, O.
Pattin Bros., Marietta, O.
Portsmouth Foundry & Machine Works, Portsmouth, O.
Randle Machinery Co., Cincinnati, O.
Rarig Engineering Co., Columbus, O.
Reeves Bros. Co., Intersec. C. & P. and A. N. R. R., Alliance, O.
Ricard Boiler & Engine Co., 700 Water St., Toledo, O.
Russell & Co., Massillon, O.
Scheidler, Reinhart, Newark, O.
Smith, C. Z., North Baltimore, O.
Smith, Myers & Schnier, 621 W. Front St., Cincinnati, O.
Smith, Philip, Sidney, O.
Strecker, Henry, Marietta, O.
Thomas, J. E., Co., Newark, O.
Trombley Boiler Works, Trombley, O.
Tucker, W. M., Newark, O.
Tudor Boiler Mfg. Co., Cincinnati, O.
Union Machine & Boiler Co., 108 River St., Cleveland, O.
Variety Iron Works Co., 57 Scranton St., Cleveland, O.
Vulcan Iron Works, 916 Summit St., Toledo, O.
Walsh, J., & Son, Cygnet, O.
Warren City Boiler Works, Warren, O.
Watkins, F. M., Co., Cincinnati, Ohio.
Welton Co., Bank St., cor. Camden Ave., Canton, O.

OREGON.

Honeyman & Co., 301-307 Front St., Portland, Ore.
Monks, James, 13th St., cor. Northrup St., Portland, Ore.
Phoenix Iron Works, E. Water St., Portland, Ore.
Portland Iron Works, 14th St., cor. Northrup St., Portland, Ore.

PENNSYLVANIA.

American Road Machine Co., Kennett Square, Pa.
Backus, Peter B., Abbott St., Wilkesbarre, Pa.
Bate, W. T., & Son, Conshohocken, Pa.
Beaver Valley Boiler Works, Beaver Falls, Pa.
Best, John (Estate of), Lancaster, Pa.
Bovaird & Seyfang Mfg. Co., 34 Davis St., Bradford, Pa.

PENNSYLVANIA, Continued.

Bricker & Co., 115 Mill St., Butler, Pa.
Burchfield, T. T., Co., 48 N. 7th St., Philadelphia, Pa.
Carlin's, Thos., Sons Co., Allegheny, Pa.
Carroll, Patrick, 1335 Mt. Vernon St., Philadelphia, Pa.
Clinch, A. F., Broad and E. Philadelphia Sts., York, Pa.
Connery & Co., 1235 W. 9th St., Philadelphia, Pa.
Erie City Iron Works, Erie, Pa.
Erie Engine Works, Erie, Pa.
Exeter Machine Works, Pittston, Pa.
Farquhar, A. B., Co., Ltd., York, Pa.
Frick Co., Waynesboro, Pa.
Geiser Mfg. Co., Waynesboro, Pa.
Gilman, William, 1110 Beach St., Philadelphia, Pa.
Goldner, Henry, & Son, Tasker St. Wharf, Del. River, Phila.
Hammond Iron Works, Warren, Pa.
Heilman Boiler Works, Front and Linden Sts., Allentown, Pa.
Harrisburg Foundry & Machine Works, Harrisburg, Pa.
International Boiler Works Co., East Stroudsburg, Pa.
Kane, William, Mfg. Co., Huntingdon Ave. and Potter St., Philadelphia, Pa.
Keeler, E., Co., Williamsport, Pa.
Kensington Engine Works, Ltd., 245 N. Broad St., Phila.
Lappan, Jas., Mfg. Co., 20th and Pike Sts., Pittsburg, Pa.
Larzelere Machine Co., Williamsport, Pa.
Link, E. M., Machinery Co., Erie, Pa.
McAdams, John W., Otis St. Wharf, Philadelphia, Pa.
McDermott Bros. Boiler Works, 3d and Cedar Sts., Allentown.
Manchester & Co., 3108 Smallman St., Pittsburg, Pa.
Messinger Mfg. Co., Tatamy, Pa.
Monroe, Robert & Son, 23d and Smallman Sts., Pittsburg, Pa.
Morrison, J. F., 41 Water St., Pittsburg, Pa.
Motter, Geo. F., & Sons, York, Pa.
Mullen, John & Son, Shamokin, Pa.
Munroe, R., & Son, Pittsburg, Pa.
Mursch, Frederick, 500 Birch St., Scranton, Pa.
Nagle Boiler & Engine Co., Erie, Pa.
Neafie & Levy Ship & Engine Building Co., 1336 Beach St., Philadelphia, Pa.
O'Brien & Double, Bradford, Pa.
Oil City Boiler Works, Oil City, Pa.
Oil Well Supply Co., Pittsburg, Pa.
Orr & Sembower, Reading, Pa.
Pearson, John M., & Co., 2 Mulberry St., Allegheny, Pa.
Pennsylvania Boiler Works, Erie, Pa.
Petroleum Iron Works Co., Washington, Pa.
Petty, J. K., & Co., 206 N. 4th St., Philadelphia, Pa.
Phoenix Iron Works Co., Meadville, Pa.
Porter Foundry & Machine Co., 1 Darrah St., Allegheny, Pa.
Radcliff, Ferguson & Co., Pencoyd, Pa.
Ravey, Joseph H., Bridge St.. Oil City, Pa.
Rees, Jas., & Sons Co., Pittsburg, Pa.
Reilly & Fearon, 1154 N. 3rd St., Philadelphia, Pa.
Rheam, S. B., & Co., 43d and A. V. Ry., Pittsburg, Pa.
Ridgway Mfg. Co., Ridgway, Pa.
Ryan, M., Washington, Pa.
Sands, Creagh & Co., Allegheny and South Aves., Allegheny.
Scaife, Wm. B., & Sons, 221 First Ave., Pittsburg, Pa.

PENNSYLVANIA, Continued.

Scattergood, D., & Co., Philadelphia, Pa.
Schimpf, George A., Pottsville, Pa.
Scott, J. A., 2237 N. Front St., Philadelphia, Pa.
Sharon Boiler Works, Sharon, Pa.
Slatington Foundry, Machine & Boiler Works, Ltd., Slatington, Pa.
Struthers-Wells Co., Warren, Pa.
Titusville Iron Co., Titusville, Pa.
Union Iron Works, Erie, Pa.
U. S. Oil & Gas Well Supply Co., 245 Water St., Pittsburg, Pa.
Vandyke, H. J., Renfrew, Pa.
Vulcan Iron Works, 727 S. Main St., Wilkesbarre, Pa.
Williamson Bros., Richmond and York Sts., Philadelphia, Pa.
Wilson, George C., & Co., 2d and Pine Sts., Reading, Pa.

RHODE ISLAND.

Colvin Foundry Co., 165 Orange St., Providence, R. I.
Cruikshank Engine Co., 286 Dyer St., Providence, R. I.
Hicks Boiler Works, 614 S. Main St., Providence, R. I.

SOUTH CAROLINA.

Riley's, J. F., Foundry & Machine Works, 6-8 South St., Charleston, S. C.

TENNESSEE.

Casey & Hedges Mfg. Co., Chattanooga, Tenn.
Culbert, Wm., & Sons Co., 127 S. Market St., Nashville, Tenn.
Dallas, B. B., 201 Hardee St., Knoxville, Tenn.
Lookout Boiler & Mfg. Co., Chattanooga, Tenn.
McCarthy & Son, 26 N. Front St., Memphis, Tenn.
Shea, Daniel, Boiler Works, Front and Washington Sts., Memphis, Tenn.
Sherman, Morris, Mfg. Co., Foot W. 6th St., Chattanooga, Tenn.
Southern Engine & Boiler Works, Jackson, Tenn.
Wood, B. G., 104 N. College St., Nashville, Tenn.

TEXAS.

Alamo Iron Works, San Antonio, Tex.
Astall Iron Works Co., 2615 Strand St., Galveston, Tex.
Bachman Foundry & Machine Co., 300 Guadaloupe St., Austin, Tex.
Banning, F. D., Waco, Tex.
Beaumont Iron Works, Bowie and Orleans Sts., Beaumont, Tex.
Bothman, William, 2509 Mechanic St., Galveston, Tex.
Collins, F. F., Mfg. Co., San Antonio, Texas.
Fort Worth Boiler Works, S. W. cor. Lamar St., Ft. Worth, Tex.
Heierman, Frank & Bro., 1304 E. 4th St., Austin, Tex.
Kane, J. J., 2716 Strand St., Galveston, Tex.
Lone Star Engine & Boiler Works, Greenville, Tex.
Neches Iron Works, Bowie and Sabine Sts., Beaumont, Tex.
Sherman Iron Works, Sherman, Tex.
Stopple & Ries, Railroad St., bet. 3d and 4th Sts., Houston, Tex.
Texas Car & Foundry Co., Texarkana, Tex.
Thrash, J. F., 286 S. Lamar St., Dallas, Tex.
Tofte, H. H., 111 Milan St., Houston, Tex.
Walsh & Cleary, 213 25th St., Galveston, Tex.
Washington Iron Works, Sherman, Tex.

UTAH.

Haynes, H. E., & Co., 149 W. South Temple St., Salt Lake City, Utah.
Holmes, Samuel, 156 W. South Temple St., Salt Lake City.
Trent Engineering & Machinery Co., Salt Lake City, Utah.

VERMONT.

Holmes, J. H., & Co., Rutland, Vt.
Simmons, H. C., N. Bennington, Vt.

VIRGINIA.

McCabe, George, & Son, 7th and Ohio Sts., Richmond, Va.
McGahey Bros., Elkton, Va.
Pettitt, C. W., Norfolk, Va.
Smith, Courtney Co., 1419 E. Cary St., Richmond, Va.
Talbott & Sons Co., 1519 E. Cary St., Richmond, Va.

WASHINGTON.

Brear, S. D., & Son, 1819 Dock St., Tacoma, Wash.
Brown Bros., Second Ave. and Washington St., Spokane, Wash.
Douglass Bros., Aberdeen, Wash.
Hopkins, Paul, & Son, Ballard, Wash.
Markey, H. W., First Ave. and Charles St., Seattle, Wash.
Molander, E. W., Port Townsend, Wash.
Moran Bros. Co., Railroad Ave., Seattle, Wash.
National Iron Works, Howard St. Bridge, Spokane, Wash.
Norton, William, 2110 A St., Tacoma, Wash.
Puget Sound Dry Dock & Machine Co., 1701 Dock St., Tacoma,
Reed Boiler Works, Bellingham, Wash.
Standard Boiler Works, 1013 First Ave. S., Seattle, Wash.
Todd, John, 1210 Railroad Ave., Seattle, Wash.
Union Iron Works, Cor. Montgomery Ave. and Pearl St., Spokane, Wash.
Vulcan Iron Works Co., cor. Fifth Ave. S. and Seattle Blvd., Seattle, Wash.
Washington Iron Works Co., Seventh Ave. S., Seattle, Wash.
Western Machinery Co., 229 Jackson St., Seattle, Wash.

WEST VIRGINIA.

Munnell, H. E., & Co., Mannington, W. Va.
Ryan, Edward, Sistersville, W. Va.

WISCONSIN.

Fairbanks & Timm, Lake St., Appleton, Wis.
Freeman, S., & Sons, Mfg. Co., Racine, Wis.
Milwaukee Boiler Co., Milwaukee, Wis.
Racine Engine & Iron Works, Racine, Wis.
Vilter Mfg. Co., Milwaukee, Wis.

7 **Horizontal, Portable.** See 6, Tubular Boilers.

8 **Horizontal Stationary.** See 6, Tubular Boilers.

9 **Locomotive.**

CONNECTICUT.

Bigelow Co., New Haven, Conn.
Bridgeport Boiler Works, Bridgeport, Conn.

DELAWARE.

Pusey & Jones Co., Wilmington, Del.

LOCOMOTIVE, continued

GEORGIA.

Lombard Iron Works & Supply Co., Augusta, Ga.

ILLINOIS.

McGarry, Patrick, 1175 So. Paulina St., Chicago, Ill.
Sharkey & Peck, 58 Law Ave., Chicago, Ill.
Springfield Boiler & Mfg. Co., Springfield, Ill.

INDIANA.

Atlas Engine Works, Indianapolis, Ind.
Heilman Machine Works, Evansville, Ind.

IOWA.

Murray Iron Works Co., Burlington, Ia.
Star Boiler Works, Clinton, Ia.

LOUISIANA.

Murphy's, John H., Iron Works, Magazine & Girod Sts., New Orleans, La.

MAINE.

Portland Co., Inc., Portland, Me.

MARYLAND.

Baltimore Marine Railway Machine & Boiler Works, Baltimore.

MASSACHUSETTS.

Allen, Wm., & Sons Co., Worcester, Mass.
Miles Steam Boiler & Plate Iron Works, 102 A St., Boston.
New Bedford Boiler & Machine Co., New Bedford, Mass.
Roberts Iron Works Co., Cambridgeport, Mass.
Russell, Jas., Boiler Works Co., cor. C & 1st Sts., Boston, Mass.
Stewart Boiler Works, Worcester, Mass.
Taunton Locomotive Mfg. Co., Taunton, Mass.

MICHIGAN.

Bay City Boiler Co., Bay City, Mich.
Brennan, John, & Co., Detroit, Mich.
Clark Engine & Boiler Co., Kalamazoo, Mich.

MINNESOTA.

Howell, R. R., & Co., Minneapolis, Minn.
Minneapolis Steel & Machinery Co., 2854 Minnehaha Ave., Minneapolis, Minn.

MISSOURI.

Fisher & Davis, 1024 N. Main St., St. Louis, Mo.

NEW JERSEY.

Birch, F. F., Dover, N. J.
Hewes & Phillips, Iron Works, Newark, N. J.
McCabe, Owen, 193 Commerce St., Newark, N. J.
Mundy, J. S., 22 Prospect St., Newark, N. J.
Rogers Locomotive Works, Paterson, N. J.

LOCOMOTIVE, continued

NEW YORK.

American Locomotive Co., 25 Broad St., New York.
Ames Iron Works, Oswego, N. Y.
Armitage-Herschell Co., North Tonawanda, N. Y.
Binghamton Iron Works, Binghamton, N. Y.
Farrar & Trefts, Buffalo, N. Y.
Lang, John B., Ithaca, N. Y.
Lidgerwood Mfg. Co., 96 Liberty St., New York.
Wallabout Steam Boiler Works, Wallabout St. and Wythe Ave., Brooklyn, N. Y.
Watertown Engine Co., Watertown, N. Y.

NORTH CAROLINA.

Mecklenberg Iron Works, Charlotte, N. C.

OHIO.

Biggs Boiler Co., Akron, O.
Houston, Stanwood & Gamble, Cincinnati, O.
Leffel, James & Co., Springfield, O.
McIlvain & Spiegel Boiler & Tank Co., Pearl & Lawrence Sts., Cincinnati, O.
Tudor Boiler Mfg. Co., Cincinnati, O.
Watkins, F. M., Co., Cincinnati, O.

OREGON.

Williamette Iron & Steel Works, Portland, Ore.

PENNSYLVANIA.

Best, John (Estate of), Lancaster, Pa.
Coatesville Boiler Works, Coatesville, Pa.
Erie Engine Works, Erie, Pa.
Farquhar, A. B., Co., Ltd., York, Pa.
Frick Co., Waynesboro, Pa.
Harrisburg Mfg. & Boiler Co., Harrisburg, Pa.
Keeler, E., Company, Williamsport, Pa.
Motter, Geo. F., & Sons, York, Pa.
Nagle Boiler & Engine Co., Erie, Pa.
Oil City Boiler Works, Oil City, Pa.
Oil Well Supply Co., Pittsburg, Pa.
Orr & Sembower, Reading, Pa.
Pennsylvania Boiler Works, Erie, Pa.
Rees, Jas., & Sons Co., Pittsburg, Pa.
Skinner Engine Co., Erie, Pa.
Struthers-Wells Co., Warren, Pa.
Williamson Bros., Richmond and York Sts., Philadelphia, Pa.

RHODE ISLAND.

American & British Mfg. Co., Providence, R. I.

WISCONSIN.

Freeman S.. & Sons, Racine, Wis.
Stevens, A. W., Co., Marinette, Wis.
Vilter Mfg. Co., Milwaukee, Wis.

10 **Marine.**

ALABAMA.

Richardson & Godard Mobile, Ala.

MARINE, continued

CALIFORNIA.

Keystone Boiler Works, Main and Folsom Sts., San Francisco, Cal.
Union Iron Works, San Francisco, Cal.

CONNECTICUT.

Bigelow Co., New Haven, Conn.
Bridgeport Boiler Works, Bridgeport, Conn.

DELAWARE.

Harlan & Hollingsworth Co., Wilmington, Del.
Pusey & Jones Co., Wilmington, Del.

FLORIDA.

Merrill-Stevens Engineering Co., Jacksonville, Fla.

ILLINOIS.

Allis-Chalmers Co., New York Life Bldg., Chicago, Ill.
McGarry, Patrick, 1175 So. Paulina St., Chicago, Ill.
Marine Iron Works, Clyburn & Southport Aves., Chicago, Ill.
Sharkey & Peck, 58 Law Ave., Chicago, Ill.
Willard, Charles P., & Co., 2 S. Canal St., Chicago, Ill.

IOWA.

Iowa Iron Works Co., Dubuque, Iowa.
Murray Iron Works Co., Burlington, Ia.
Star Boiler Works, Clinton, Ia.

KENTUCKY.

Vogt, Henry, Machine Co., Louisville, Ky.

LOUISIANA.

Murphy's, John H., Iron Works, Magazine & Girod Sts., New Orleans, La.

MAINE.

Bath Iron Works, Bath, Me.
Portland Co., Inc., Portland, Me.

MARYLAND.

Baltimore Marine Railway Machine & Boiler Works, Baltimore.
Baltimore Ship Building & Dry Dock Co., Locust Point, Baltimore, Md.
Codd, E. J., Co., Baltimore, Md.
Maryland Steel Co., Marine Dept., Baltimore, Md.

MASSACHUSETTS.

Allen, Wm., & Sons Co., Worcester, Mass.
Atlantic Works, 70 Border St., E. Boston, Mass.
Clark, E. S., 272 Freeport St., Boston, Mass.
Miles Steam Boiler & Plate Works, 102 A St., Boston, Mass.
Roberts Iron Works Co., Cambridgeport, Mass.
Russell, Jas., Boiler Works Co., Cor. C and 1st Sts., Boston.

MARINE, continued

MICHIGAN.

Bay City Boiler Co., Bay City, Mich.
Clark Engine & Boiler Co., Kalamazoo, Mich.
Detroit Screw Works, Detroit, Mich.
Dutton, C. H., Co., Kalamazoo, Mich.
Manistee Iron Works Co., Manistee, Mich.
Truscott Boat Mfg. Co., St. Joseph, Mich.
Wickes Bros., Saginaw, Mich.

MINNESOTA.

Howell, R. R., & Co., Minneapolis, Minn.

NEW JERSEY.

Birch, F. F., Dover, N. J.
Rogers, John M., Boat, Gauge & Drill Works, Gloucester City, N. J.

NEW YORK.

Armitage-Herschell Co., North Tonawanda, N. Y.
Babcock & Wilcox Co., 85 Liberty St., New York. *See adv. page 7.*
Coldwell, Wilcox Co., Newburgh, N. Y.
Cunningham, Christopher, Greenpoint Ave., Brooklyn, N. Y.
Farrar & Trefts, Buffalo, N. Y.
Fitzgibbons Boiler Co., Oswego, N. Y.
Gas Engine & Power Co., and Chas. L. Seabury & Co., Morris Heights, N. Y.
Jamestown Boiler Works, Jamestown, N. Y.
Kingsford Foundry & Machine Works, Oswego, N. Y.
Lake Erie Engineering Works, Buffalo, N. Y.
Mosher Water Tube Boiler Co., 1 Broadway, New York.
Nichols, D. M., 2 Gouverneur Slip, New York.
Novelty Steam Boiler Works, Greenpoint Ave. and Newtown Creek, Brooklyn, N. Y.
Quintard Iron Works, 742 E. 12th St., New York.
Watertown Engine Co., Watertown, N. Y.
White, Robert, Engineering Co., Foot Columbia St., Brooklyn.

OHIO.

Gem City Boiler Co., Dayton, O.
McIlvain & Spiegel Boiler & Tank Co., Pearl & Lawrence Sts., Cincinnati, O.
Middleport Boiler Works, Middleport, O.
River Machine & Boiler Co., Cleveland, O.

PENNSYLVANIA.

Best, John (Estate of), Lancaster, Pa.
Coatesville Boiler Works, Coatesville, Pa.
Cramp, Wm., & Sons, Beach & Ball Sts., Philadelphia, Pa.
Keeler, E., Co., Williamsport, Pa.
Neafie & Levy Ship & Engine Bldg. Co., 1336 Beach St., Philda.
Oil City Boiler Works, Oil City, Pa.
Pennsylvania Boiler Works, Erie, Pa.
Phoenix Iron Works Co., Meadville, Pa.
Rees, Jas., & Sons Co., Pittsburg, Pa.

MARINE, continued.

PENNSYLVANIA, Continued.

Southwark Foundry & Machine Co., 430 Washington Ave., Philadelphia, Pa.
Wetherill, Robert & Co., Chester, Pa.
Williamson Bros., Richmond and York Sts., Philadelphia.

RHODE ISLAND.

Almy Water Tube Boiler Co., Providence, R. I.

SOUTH CAROLINA.

Charleston Iron Works, Charleston, S. C.

11 **Return Tubular.** Similar to return flue boilers, but having tubes which are smaller than flues.

CALIFORNIA.

Fulton Iron Works, San Francisco, Cal.

CONNECTICUT.

Bigelow Co., New Haven, Conn.
Bridgeport Boiler Works, Bridgeport, Conn.

DELAWARE.

Harlan & Hollingsworth Co., Wilmington, Del.
Pusey & Jones, Wilmington, Del.

GEORGIA.

Lombard Iron Works & Supply Co., Augusta, Ga.

IOWA.

Murray Iron Works Co., Burlington, Ia.
Star Boiler Works, Clinton, Ia.

KENTUCKY.

Vogt, Henry Machine Co., Louisville, Ky.

LOUISIANA.

Murphy's, John H., Iron Works, Magazine & Girod Sts., New Orleans, La.

MAINE.

Bath Iron Works, Bath, Me.
Portland Co., Inc., Portland, Me.

MASSACHUSETTS.

Atlantic Works, 70 Border St., E. Boston, Mass.
Rawson & Morrison Mfg. Co., Cambridgeport, Mass.

MICHIGAN.

Clark Engine & Boiler Co., Kalamazoo, Mich.
Dutton, C. H., Kalamazoo, Mich.
Wickes Bros. Saginaw Mich.

RETURN TUBULAR, continued

MINNESOTA.

Howell R. R., & Co., Minneapolis, Minn.
Livermore, F. D., Rochester, Minn.
Minneapolis Steel & Machinery Co., 2854 Minnehaha Ave., Minneapolis, Minn.

MISSOURI.

Freeman Foundry & Machine Works, Joplin, Mo.
Urie Boiler & Machine Co., Kansas City, Mo.

NEW JERSEY.

Birch, F. F., Dover, N. J.

NEW YORK.

Ames Iron Works, Oswego, N. Y.
Armitage-Herschell Co., North Tonawanda, N. Y.
Beggs, Jas., & Co., 9 Dey St., New York.
Dederick's, P. K., Sons, Albany, N. Y.
Lidgerwood Mfg. Co., 96 Liberty St., New York.
Watertown Engine Co., Watertown, N. Y.

NORTH CAROLINA.

Mecklenburg Iron Works, Charlotte, N. C.

OHIO.

Gem City Boiler Co., Dayton, O.
Leffel, Jas., & Co., Springfield, O.
McIlvain & Spiegel Boiler & Tank Co., Pearl & Lawrence Sts., Cincinnati, O.
Mansfield Engineering Co., Mansfield, O.
Rarig Engineering Co., Columbus, O.

PENNSYLVANIA.

American Road Machine Co., Kennett Square, Pa.
Best, John (Estate of), Lancaster, Pa.
Coatesville Boiler Works, Coatesville, Pa.
Erie City Iron Works, Erie, Pa.
Ervien, C. W., & Co., Memphis St., near E. Columbia Ave., Philadelphia, Pa.
Farquhar, A. B., Co., Ltd., York, Pa.
Finch Mfg. Co., Scranton, Pa.
Frick Co., Waynesboro, Pa.
Geiser Mfg. Co., Waynesboro, Pa.
Keeler, E., Co., Williamsport, Pa.
Larzelere Machine Co., Williamsport, Pa.
Nagle Boiler & Engine Co., Erie, Pa.
Naylor, John S., Girard Av. & Front St., Philadelphia, Pa.
Pennsylvania Boiler Works, Erie, Pa.
Phoenix Iron Works Co., Meadville, Pa.
Oil City Boiler Works, Oil City, Pa.
Reilly & Fearon, 1154 N. 3d St., Philadelphia, Pa.
Wetherill, Robert, & Co., Chester, Pa.

TENNESSEE.

Casey & Hedges Mfg. Co., Chattanooga, Tenn.
Southern Engine & Boiler Works, Jackson, Tenn.

RETURN TUBULAR, continued.

WISCONSIN.

Freeman, S., & Sons Mfg. Co., Racine, Wis.
Vilter Mfg. Co., Milwaukee, Wis.

12 **Scotch.** Cylindrical internally fired boilers, having a cylindrical fire box and return tubes.

ALABAMA.

Richardson & Godard, Mobile, Ala.

CALIFORNIA.

Fulton Iron Works, San Francisco, Cal.

CONNECTICUT.

Bigelow Co., New Haven, Conn.

DELAWARE.

Harlan & Hollingsworth, Wilmington, Del.
Pusey & Jones Co., Wilmington, Del.

ILLINOIS.

Allis-Chalmers Co., New York Life Bldg., Chicago, Ill.
Springfield Boiler & Mfg. Co., Springfield, Ill.

INDIANA.

Richmond Machine Works, Richmond, Ind.

IOWA.

Murray Iron Works Co., Burlington, Ia.
Star Boiler Works, Clinton, Ia.

KENTUCKY.

Vogt, Henry, Machine Co., Louisville, Ky.

LOUISIANA.

Murphy's, John H., Iron Works, Magazine & Girod Sts., New Orleans, La.

MAINE.

Bath Iron Works, Bath, Me.
Portland Co., Inc., Portland, Me.

MASSACHUSETTS.

Atlantic Works, 70 Border St., E. Boston, Mass.
Robb-Mumford Boiler Co., Inc., 170 Summer St., Boston, Mass.
Stewart, C., & Son, Worcester, Mass.

MICHIGAN.

Great Lakes Engineering Works, Detroit, Mach.
Wickes Bros., Saginaw, Mich.

MINNESOTA.

Minneapolis Steel & Machinery Co., 2854 Minnehaha Ave., Minneapolis, Minn.

SCOTCH, continued

NEW JERSEY.

Birch, F. F., Dover, N. J.

NEW YORK.

Armitage-Herschell Co., North Tonawanda, N. Y.
Kingsford Foundry & Machine Works, Oswego, N. Y.
Lake Erie Engineering Works, Buffalo, N. Y.
Parkhurst Compound Steam Boiler Co., Oswego, N. Y.
Watertown Engine Co., Watertown, N. Y.

OHIO.

American Ship Building Co., Cleveland, O.
Gem City Boiler Works, Dayton, O.
Leffel, James, & Co., Springfield, O.
McIlvain & Spiegel Boiler & Tank Co., Pearl & Lawrence Sts., Cincinnati, O.

OREGON.

Williamette Iron & Steel Works, Portland, Ore.

PENNSYLVANIA.

Farquhar, A. B., Co., Ltd., York, Pa.
Keeler, E., Co., Williamsport, Pa.
Neafie & Levy Ship & Engine Bldg. Co., 1336 Beach St., Philda.
Oil City Boiler Works, Oil City, Pa.
Pennsylvania Boiler Works, Erie, Pa.
Phoenix Iron Works Co., Meadville, Pa.
Rees, Jas., & Sons Co., Pittsburg, Pa.

WISCONSIN.

Freeman, S., & Sons Mfg. Co., Racine, Wis.
Vilter Mfg. Co., Milwaukee, Wis.

13 **Vertical, Portable.** See 6, Tubular Boilers.

14 **Vertical Stationary.** See 6, Tubular Boilers.

15 **WATER TUBE.** Having tubes or pipes for holding the water.

Abendroth & Root Mfg. Co., 99 John St., New York.
Allis-Chalmers Co., New York Life Bldg., Chicago, Ill.
Almy Water Tube Boiler Co., Providence, R. I.
Armitage-Herschell Co., North Tonawanda, N. Y.
Atlas Engine Works, Indianapolis, Ind.
Aultman & Taylor Machinery Co., Mansfield, O.
Babcock & Wilcox Co., 85 Liberty St., New York. *See adv. page 7.*
Bath Iron Works, Bath, Me.
Biggs Boiler Co., Akron, O.
Birch, F. F., Dover, N. J.
Casey & Hedges Mfg. Co., Chattanooga, Tenn.
Clark, E. S., 272 Freeport St., Boston, Mass.

WATER TUBE, continued

Clonbrock Steam Boiler Co., Lorraine & Court Sts., Brooklyn.
Cramp Ship & Engine Building Co., Philadelphia, Pa.
Dearing Water Tube Boiler Co., Detroit, Mich.
Delaney, P., & Co., Newburgh, N. Y.
East End Boiler Works, 19 St. Aubin Ave., Detroit, Mich.
Edge Moor Iron Co., Wilmington, Del.
Ehrsam, J. B., & Sons Mfg. Co., Enterprise, Kans.
Erie City Iron Works, Erie, Pa.
Franklin Boiler Works Co., Troy, N. Y.
Gas Engine & Power Co., and Chas. L. Seabury & Co., Morris Heights, N. Y.
Gill, John L., Jr., 204 S. 3d St., Philadelphia, Pa.
Granger, A. D., Co., 95 Liberty St., New York.
Gurney Heater Mfg. Co., 74 Franklin St., Boston, Mass.
Harlan & Hollingsworth Co., Wilmington, Del.
Harrison Safety Boiler Works, 17th & Clearfield Sts., Philda.
Hazleton Boiler Co., Rutherford, N. J.
Heine Safety Boiler Co., 704 Commonwealth Trust Bldg., St. Louis, Mo.
Hyde Bros., & Co., Lewis Bldg., Pittsburg, Pa.
Keeler, E., Co., Williamsport, Pa.
Kewanee Boiler Co., Kewanee, Ill.
Link-Belt Machinery Co., 39th St. & Stewart Ave., Chicago, Ill.
McNeil Boiler Co., Akron, O.
Mansfield Engineering Co. Mansfield, O.
Maryland Steel Co., Baltimore, Md.
Mosher Water Tube Boiler Co., 1 Broadway, New York.
Munroe, R., & Son, Pittsburg, Pa.
Murray Iron Works Co., Burlington, Ia.
Murray & Tregurtha Co., South Boston, Mass.
National Water Tube Boiler Co., New Brunswick, N. J.
Neafie & Levy Ship & Engine Bldg. Works, Philadelphia, Pa.
New York Safety Steam Power Co., 113 Liberty St., N. Y.
Nichols & Langworthy Machine Co., Hope Valley, R. I.
Ofeldt, F. W., & Sons, Foot of W. 25th St., Brooklyn, N. Y.
Oil City Boiler Works, Oil City, Pa.
Parker Engine Co., Drexel Bldg., Philadelphia, Pa.
Pollock, Wm. B., & Co., Youngstown, O.
Provuncher Water Tube Boiler Co., 132 Water St., East Providence, R. I.
Roberts Safety Water Tube Boiler Co., 39 Cortlandt St., N. Y.
Rochester Machine Tool Co., Rochester, N. Y.
Russell, Jas., Boiler Works Co., Cor. C & 1st Sts., Boston.
Standard Safety Boiler Co., Marquette Bldg., Chicago, Ill.
Stirling Co., Pullman Bldg., Chicago, Ill.
Struthers-Wells Co., Warren, Pa.
Taylor Water Tube Boiler Co., Detroit, Mich.
Thorpe, Platt & Co., 97 Cedar St., New York.
Tudor Boiler Mfg. Co., Cincinnati, O.
Union Iron Works, Erie, Pa.
Vogt, Henry, Machine Co., Louisville, Ky.
Ward Water Tube Boiler Co., Charleston, W. Va.
Wickes Bros., Saginaw, Mich.
Wood, John, Mfg. Co., Conshohocken, Pa.

16 **Marine.** See 15, Water Tube Boilers.

17 # ENGINES.

18 **AGRICULTURAL.** See 36, Portable.

19 **ARTESIAN AND DEEP WELL.** See 252, Artesian and Deep Well Pumps.

20 **AUTOMATIC, CUT-OFF.** Engines having a valve gear controlled by the governor, so that the point of cut is varied according to the load and steam pressure.

American Engine Co., Bound Brook, N. J.
Ames Iron Works, Oswego, N. Y.
Atlas Engine Works, Indianapolis, Ind.
Aultman & Taylor Machinery Co., Mansfield, O.
Ball Engine Co., Erie, Pa.
Ball & Wood Co., 17 Battery Place, New York.
Brown, C. H., & Co., 21 Main St., Fitchburg, Mass.
Brownell Co., Dayton, Ohio. *See adv. page 3.*
Buckeye Engine Co., Salem, O.
Buffalo Forge Co., Buffalo, N. Y.
Chandler & Taylor Co., Indianapolis, Ind.
Clark Bros., Belmont, N. Y.
Comstock Mfg. Co., Comstock, Mich.
Davenport Foundry & Machine Co., Davenport, Ia.
Erie City Iron Works, Erie, Pa.
Erie Engine Works, Erie, Pa.
Erie Mfg. & Supply Co., Erie, Pa.
Erie Pump & Engine Co., Erie, Pa.
Fitchburg Steam Engine Co., Fitchburg, Mass.
Frick Co., Waynesboro, Pa.
Fulton Iron Works, San Francisco, Cal.
Fulton Iron Works, St. Louis, Mo.
Greenwald, I. & E. Co., 720 E. Pearl St., Cincinnati, O. *See adv. page 4.*
Harrisburg Foundry & Machine Co., Harrisburg, Pa. *See adv. page 17.*
Ide, A. L., & Sons, Springfield, Ill.
Ironton Engine Co., Ironton, O.
Jackson, Byron, Machine Works, San Francisco, Cal.
Kensington Engine Works, Ltd., 245 N. Broad St., Philda.
Kingsford Foundry & Machine Works, Oswego, N. Y.
Krogh Mfg. Co., San Francisco, Cal.
Lane & Bodley Co., Cincinnati, O.
Leffel, James, & Co., Springfield, O.
Liddell Co., Charlotte, N. C.
McIntosh, Seymour & Co., Auburn, N. Y.
Mackintosh, Hemphill & Co., Ltd., Pittsburg, Pa.
Morris Machine Works, Baldwinsville, N. Y.
Murray Iron Works Co., Burlington, Ia.
Nagle Boiler & Engine Co., Erie, Pa.
Naylor, John S., Girard Av. & Front St., Philadelphia, Pa.
New Britain Machine Co., New Britain, Conn.
New York Safety Steam Power Co., 113 Liberty St., N. Y.
Noye Mfg. Co., Buffalo, N. Y.
Oil City Boiler Works, Oil City, Pa.
Payne Co., Elmira, N. Y.
Phoenix Iron Works Co., Meadville, Pa.

AUTOMATIC CUT-OFF ENGINES, continued

Providence Engineering Works, Providence, R. I.
Putnam Machine Co., Fitchburg, Mass.
Racine Engine & Iron Works, Racine, Wis.
Ridgway Dynamo & Engine Co., Ridgway, Pa.
Rollins Engine Co., Nashua, N. H.
Russell Engine Co., Massillon, O.
Skinner Engine Co., Erie, Pa.
Southwark Foundry & Machine Co., 430 Washington Ave., Philadelphia, Pa.
Stearns Mfg. Co., Erie, Pa.
Straight Line Engine Co., Syracuse, N. Y.
Strait, H. N., Mfg. Co., Kansas City, Kan.
Sturtevant, B. F., Co., Hyde Park, Mass.
Tod, William, Co., Youngstown, O.
Sullivan Machinery Co., 135 Adams St., Chicago, Ill.
Troy Engine & Machine Co., Troy, Pa.
Twiss, Nelson W., New Haven, Conn.
Valley Iron Works, Williamsport, Pa.
Watertown Engine Co., Watertown, N. Y.
Wellman-Seaver-Morgan Co., Cleveland, O.
Westinghouse Machine Co., Pittsburg, Pa.

21 **High Speed, Automatic.** Adapted to high speed, for electric lighting, etc.

American Blower Co., Detroit, Mich.
Ames Iron Works, Oswego, N. Y.
Anderson Foundry & Machine Works, Anderson, Ind.
Atlas Engine Works, Indianapolis, Ind.
Ball Engine Co., Erie, Pa.
Ball & Wood Co., 17 Battery Place, New York.
Brownell Co., Dayton, Ohio. *See adv. page 3.*
Buckeye Engine Co., Salem, O.
Buffalo Forge Co., Buffalo, N. Y.
Chase Engine & Mfg. Co., Mattoon, Ill.
Dake Engine Co., Grand Haven, Mich.
Erie City Iron Works, Erie, Pa.
Erie Mfg. & Supply Co., Erie, Pa.
Fitchburg Steam Engine Co., Fitchburg, Mass.
Haberkorn Engine Co., Fort Wayne, Ind.
Harrisburg Foundry & Machine Co., Harrisburg, Pa. *See adv. page 17.*
Ide, A. L., & Sons, Springfield, Ill.
Imperial Engine Co., Painted Post, N. Y.
Ironton Engine Co., Ironton, O.
Kensington Engine Works, 245 N. Broad St., Philadelphia, Pa.
Larzelere Machine Co., Williamsport, Pa.
Leffel, J., & Co., Springfield, O.
Link, E. M., Machinery Co., Erie, Pa.
McIntosh, Seymour & Co., Auburn, N. Y.
Mansfield Engineering Co., Mansfield, O.
Mietz, August, 128 Mott St., New York.
Nagle Boiler & Engine Co., Erie, Pa.
Naylor, John S., Girard Av. & Front St., Philadelphia, Pa.
New Britain Mch. Co., New Britain, Conn. *See adv. page 6.*
New York Safety Steam Power Co., 113 Liberty St., New York.
Nichols & Langworthy Machine Co., Hope Valley, R. I.
Oil City Boiler Works, Oil City, Pa.

AUTOMATIC HIGH SPEED ENGINES, continued

Payne Co., Elmira, N. Y.
Phoenix Iron Works Co., Meadville, Pa.
Racine Engine & Iron Works, Racine, Wis.
Ridgway Dynamo & Engine Co., Ridgway, Pa.
Rochester Machine Tool Co., Rochester, N. Y.
Russell Engine Co., Massillon, O.
Shepherd Engineering Co., Franklin, Pa.
Skinner Engine Co., Erie, Pa.
Southwark Foundry & Machine Co., 430 Washington Ave., Philadelphia, Pa.
Straight Line Engine Co., Syracuse, N. Y.
Strait, H. N., Mfg. Co., Kansas City, Kan.
Sturtevant, B. F., Co., Hyde Park, Mass.
Twiss, Nelson W., New Haven, Conn.
Watertown Engine Co., Watertown, N. Y.
Wellman-Seaver-Morgan Co., Cleveland, Ohio.
Westinghouse Machine Co., Pittsburg, Pa.

22 **BLOWING.** Having air cylinders for supplying air to blast furnaces, etc.

Allis-Chalmers Co., New York Life Bldg., Chicago, Ill.
Atlas Engine Works, Indianapolis, Ind.
Bath Iron Works, Bath, Me.
Blake, Geo. F., Mfg. Co., 114 Liberty St., New York.
Buckeye Engine Co., Salem, O.
Deane Steam Pump Co., Holyoke, Mass.
Lane & Bodley Co., Cincinnati, O.
Mackintosh, Hemphill & Co., Ltd., Pittsburg, Pa.
Mesta Machine Co., Pittsburg, Pa.
National Foundry & Machine Co., Louisville, Ky.
Racine Engine & Iron Works, Racine, Wis.
Rarig Engineering Co., Columbus, O.
Snider-Hughes Co., Cleveland, O.
Southwark Foundry & Machine Co., 430 Washington Ave., Philadelphia, Pa.
Strait, H. N., Mfg. Co., Kansas City, Kan.
Tod, William, Co., Youngstown, O.
Weimer Machine Works Co., Lebanon, Pa.
Wellman-Seaver-Morgan Co., Cleveland, Ohio.
Wells, F. C., Estate of, 116 Clinton St., Chicago, Ill.
Westinghouse Machine Co., Pittsburg, Pa.

23 **COMPOUND.** In which the steam expands in two stages passing through two or more cylinders.

Adams, W. T., Machine Co., Corinth, Miss.
Allis-Chalmers Co., New York Life Bldg., Chicago, Ill.
American Engine Co., Bound Brook, N. J.
American & British Mfg. Co., Providence, R. I.
Armitage-Herschell Co., North Tonawanda, N. Y.
Atlantic Works, 70 Border St., E. Boston, Mass.
Atlas Engine Works, Indianapolis, Ind.
Aultman & Taylor Machinery Co., Mansfield, O.
Baldwin Locomotive Works, 500 N. Broad St., Philadelphia.
Ball Engine Co., Erie, Pa.
Ball & Wood Co., 17 Battery Place, New York.
Barnes, Charles, Co., 53 Main St., Cincinnati, O.
Bath Iron Works, Bath, Me.

COMPOUND ENGINES, continued

Brown, C. H., & Co., 21 Main St., Fitchburg, Mass.
Buckeye Engine Co., Salem, O.
Buffalo Forge Co., Buffalo, N. Y.
Chandler & Taylor Co., Indianapolis, Ind.
Cooper, C. & G., Co., Mt. Vernon, O.
Edwards, Jos., & Co., 412 Water St., New York.
Erie City Iron Works, Erie, Pa.
Filer & Stowell Co., Milwaukee, Wis.
Fischer Foundry & Machine Co., Pittsburg, Pa.
Fishkill Landing Machine Co., Fishkill-on-Hudson, N. Y.
Fitchburg Steam Engine Co., Fitchburg, Mass.
Frick Co., Waynesboro, Pa.
Great Lakes Engineering Works, Detroit, Mich.
Greenwald, I. & E. Co., 720 E. Pearl St., Cincinnati, O. *See adv. page 4.*
Harris, Wm. A., Steam Engine Co., Providence, R. I.
Harrisburg Foundry & Machine Co., Harrisburg, Pa. *See adv. page 17.*
Hewes & Phillips Iron Works, Newark, N. J.
Hooven, Owens, Rentschler Co., Hamilton, O.
Houston, Stanwood & Gamble, Cincinnati, O.
Huber Mfg. Co., Marion, O.
Ide, A. L., & Sons, Springfield, Ill.
Krogh Mfg. Co., San Francisco, Cal.
Lane & Bodley Co., Cincinnati, O.
McIntosh, Seymour & Co., Auburn, N. Y.
Mansfield Engineering Co., Mansfield, O.
Minneapolis Steel & Machinery Co., 2854 Minnehaha Ave., Minneapolis, Minn.
Murray Iron Works Co., Burlington, Ia.
Neafie & Levy Ship & Engine Bldg. Co., 1336 Beach St., Philadelphia, Pa.
Newburg Ice Machine & Engine Co., Newburg, N. Y.
Noye Mfg. Co., Buffalo, N. Y.
Oil City Boiler Works, Oil City, Pa.
Payne Co., Elmira, N. Y.
Phoenix Iron Works Co., Meadville, Pa.
Providence Engineering Works, Providence, R. I.
Quincy Engine Works, Quincy, Ill.
Rarig Engineering Co., Columbus, O.
Reeves Engine Co., Trenton, N. J.
Russell Engine Co., Massillon, O.
St. Louis Iron Machine Works, St. Louis, Mo.
Shepherd Engineering Co., Franklin, Pa.
Southwark Foundry & Machine Co., 430 Washington Ave., Philadelphia, Pa.
Strait, H. N., Mfg. Co., Kansas City, Kan.
Sturtevant, B. F., Co., Hyde Park, Mass.
Sullivan Machinery Co., 135 Adams St., Chicago, Ill.
Tod, Wm., Co., Youngstown, O.
Union Iron Works, San Francisco, Cal.
Watertown Engine Co., Watertown, N. Y.
Watts-Campbell Co., Newark, N. J.
Weimer Machine Works Co., Lebanon, Pa.
Wellman-Seaver-Morgan Co., Cleveland, O.
Westinghouse Machine Co., Pittsburg, Pa.
Wetherill, Robert, & Co., Chester, Pa.

24 **CORLISS.** Having four semi-rotary valves and a drop cut-off valve gear controlled by the governor.

Allis-Chalmers Co., New York Life Bldg., Chicago, Ill.
American & British Mfg. Co., Providence, R. I.
Atlas Engine Works, Indianapolis, Ind.
Ball Engine Co., Erie, Pa.
Ball & Wood Co., 17 Battery Place, New York.
Bass Foundry & Machine Co., Fort Wayne, Ind.
Bates Machine Co., Joliet, Ill.
Brown Corliss Engine Co., Corliss, Wis.
Clark Bros, Belmont, N. Y.
Cooper, C. & G., Co., Mt. Vernon, O.
Cox & Sons Co., Bridgeton, N. J.
Erie City Iron Works, Erie, Pa.
Filer & Stowell Co., Milwaukee, Wis.
Fishkill Landing Machine Co., Fishkill-on-Hudson, N. Y.
Frick Co., Waynesboro, Pa.
Fulton Iron Works, St. Louis, Mo.
Griffith & Wedge Co., Zanesville, O.
Hardie-Tynes Foundry & Machine Co., Birmingham, Ala.
Harrisburg Foundry & Machine Co., Harrisburg, Pa. *See adv. page 17.*
Harris, Wm. A., Steam Engine Co., Providence, R. I.
Hendrie & Bolthoff Steam Mfg. & Supply Co., Denver, Col.
Hewes & Phillips Iron Works, Newark, N. J.
Hooven, Owens, Rentschler Co., Hamilton, O.
Kenney & Co., Scottdale, Pa.
Knowlson & Kelley, Troy, N. Y.
Lane & Bodley Co., Cincinnati, O.
Mesta Machine Co., Pittsburg, Pa.
Minneapolis Steel & Machinery Co., 2854 Minnehaha Ave., Minneapolis, Minn.
Murray Iron Works Co., Burlington, Ia.
Nagle Boiler & Engine Co., Erie, Pa.
Naylor, John S., Girard Av. & Front St., Philadelphia, Pa.
Newburg Ice Machine & Engine Co., Newburg, N. Y.
Portland Co., Inc., Portland, Me.
Providence Engineering Works, Providence, R. I.
Rarig Engineering Co., Columbus, O.
Remington Machine Co., Wilmington, Del.
St. Louis Iron & Machine Works, St. Louis, Mo.
Strait, H. N., Mfg. Co., Kansas City, Kan.
Sullivan Machinery Co., 135 Adams St., Chicago, Ill.
Tod, William, Co., Youngstown, O.
Totten & Hogg Iron & Steel Foundry Co., Pittsburg, Pa.
Twiss, Nelson W., New Haven, Conn.
Vilter Mfg. Co., Milwaukee, Wis.
Watertown Engine Co., Watertown, N. Y.
Watts-Campbell Co., Newark, N. J.
Weimer Machine Works Co., Lebanon, Pa.
Wellman-Seaver-Morgan Co., Cleveland, O.
Westinghouse Machine Co., Pittsburg, Pa.
Wetherill, Robert, & Co., Chester, Pa.

25 **Compound.** See 23, Compound Engines.

26 **CUT-OFF.** See 20, Automatic Cut-Off Engines.

27 **DECK.** See 30, Hoisting Engines.

28 **DERRICK.** See 30, Hoisting Engines.

29 **GAS AND GASOLINE.** Of the internal combustion class, using gas, gasoline or oil for the motive power, instead of steam.

Advance Mfg. Co., Hamilton, O.
Ajax Iron Works, Corry, Pa.
Alamo Mfg. Co., Hillsdale, Mich.
Albion Engine & Motor Co., Albion, Mich.
Alexander & Crouch, 70 W. Monroe St., Chicago, Ill.
Allis-Chalmers Co., New York Life Bldg., Chicago, Ill.
Allman Gas Engine & Machine Co., 29-31 Sullivan St., N. Y.
American Engineering Co., Springfield, O.
American Gas Engine Co., Portland, Me.
American & British Mfg. Co., Providence, R. I.
Amstutz & Osborn Co., Caxton Bldg., Cleveland, O.
Anderson Tool Co., Anderson, Ind.
Anderson, Carl, Co., 23 N. Clinton St., Chicago, Ill.
Ashurst Press Drill Co., Havana, Ill.
Ayres Gasoline Engine & Motor Works, Saginaw, Mich.
Backus Water Motor Co., 172 Pennsylvania Ave., Newark, N. J.
Barrauth Bros., Springfield, O.
Bass Fdry. & Mche. Co., Fort Wayne, Ind.
Bates & Edmonds Motor Co., Lansing, Mich.
Bauer Machine Works Co., Kansas City, Mo.
Bay State Gas Engine Co., Merrimac St., Boston, Mass.
Beilfuss Motor Co., Lansing, Mich.
Benton Harbor Machine Co., Benton Harbor, Mich.
Bassemer Gas Engine Co., Grove City, Pa.
Best Mfg. Co., San Leandro, Cal.
Borden & Selleck Co., 48 Lake St., Chicago, Ill.
Bovaird & Seyfang Mfg. Co., 34 Davis St., Bradford, Pa.
Bronbacher, Max H. C., Buffalo, N. Y.
Brown, Cochrane Co., Lorain, O.
Brunner, Chas., Peru, Ill.
Buckeye Gas & Gasoline Engine Co., Aurora, Ill.
Buffalo Engine Co., Buffalo, N. Y.
Callahan, W. P., & Co., Dayton, O.
Capital Gas Engine Co., Indianapolis, Ind.
Cedar Rapids Foundry & Machine Co., Cedar Rapids, Iowa.
Central City Iron Works, Stevens Point, Wis.
Charter Gas Engine Co., Sterling, Ill.
Chelsea Mfg. Co., Chelsea, Mich.
Clifton Motor Works, 229 E. Clifton Ave., Cincinnati, O.
Collins, F. F., Mfg. Co., San Antonio, Texas.
Colonial Foundry & Machine Co., S. Norwalk, Conn.
Columbus Machine Co., Columbus, Ohio. *See adv. page 16.*
Cook Mfg. Co., Albion, Mich.
Corliss Gas Engine Co., 227 Folsom St., San Francisco, Cal.
Cushman Motor Co., Lincoln, Neb.
Dayton Gas Engine Co., Dayton O.
Dempster Mill Mfg. Co., Beatrice, Neb.
Des Moines Gas Engine & Electric Co., Des Moines, Ia.
Dissinger, C. H. A., & Bro., Wrightsville, Pa.
Domestic Engine Co., Hagerstown, Md.
Du Bois Iron Works, Du Bois, Pa.
Dyke, A. L., 1402 Pine St., St. Louis, Mo.
Eagle Bicycle Mfg. Co., Corrington, Conn.
Ellington Mfg. Co., Quincy, Ill.

GAS AND GASOLINE ENGINES, continued

Ellingworth & Lance, Utica, N. Y.
Elmore Mfg. Co., Clyde, O.
Elyria Gas Engine Co., Elyria, O.
Fairbanks Co., Broome & Elm Sts., New York.
Fairbanks, Morse & Co., 172 Franklin St., Chicago, Ill.
Fauber Mfg. Co., Elgin, Ill.
Fay & Bowen Engine Co., Geneva, N. Y.
Flint & Walling Mfg. Co., Kendallville, Ind.
Foos Gas Engine Co., Springfield, O.
Forsyth, William, & Son, West Lynn, Mass.
Fort Wayne Foundry & Machine Co., Fort Wayne, Ind.
Garrett Machine Works, Garrett, Ind.
Gas Engine & Power Co., & Chas. Seabury Co., Morris Heights, New York.
Geiser Mfg. Co., Waynesboro, Pa.
Gemmer Engine & Mfg. Co., Marion, Ind.
General Power Co., 81 Fulton St., New York.
Globe Iron Works Co., Minneapolis, Minn.
Good Gas Engine Co., Dayton, O.
Grand Rapids Gas Engine & Yacht Co., Grand Rapids, Mich.
Gray & Prior Machine Co., Hartford, Conn.
Hart, Parr, Co., Charles City, Ia.
Hercules Gas Engine Works, San Francisco, Cal.
Hick's, E. G., Gasoline Engine Co., Minneapolis, Minn.
Homan, J. & E., 378 West Broadway, New York.
Hydraulic Press Mfg. Co., Mt. Gilead, O.
International Motor Co., St. Louis, Mo.
Jacobson Machine Mfg. Co., Warren, Pa.
Jamieson, M. W., & Co., Warren, Pa.
Kelly, O. S., Western Mfg. Co., Iowa City, Ia.
Keystone Gas Engine Co., New Brighton, Pa.
King, Chas. B., Co., Detroit, Mich.
King, Quick & Gerber, Paterson, N. J.
Kling Bros., 287 Hawthorne Ave., Chicago, Ill.
Kumberger & Vreeland, 33 Sullivan St., New York.
Lambert Gas & Gasoline Engine Co., Anderson, Ind.
Lammert & Mann, 153 S. Jefferson St., Chicago, Ill.
Lansing Motor & Pump Co., Lansing, Mich.
Lazier Gas Engine Co., Buffalo, N. Y.
Leland & Faulconer, 480 Trombly Ave., Detroit, Mich.
Link, E. M., Machinery Co., Erie, Pa.
Loomis, Frank W., 403 Canal St., New York.
Lowell Model Co., No. Chelmsford, Mass.
Lozier Motor Co., 1 Broadway, New York.
Lyons Engine Co., Lyons, Mich.
Marinette Iron Works, Mfg. Co., Marinette, Wis.
Mietz, August, 128-138 Mott St., New York.
Middletown Machine Co., Middletown, O.
Miller Improved Gas Engine Co., Springfield, O.
Model Gas Engine Co., Auburn, Ind.
Moline Pump Co., Moline, Ill.
Murray & Tregurtha Co., South Boston, Mass.
Myrick Machine Co., Olean, N. Y.
National Engineering Co., Saginaw, Mich.
National Gear Wheel & Fdry. Co., Allegheny, Pa.
National Meter Co., 84-86 Chambers St., New York.
Neustadt-Perry Co., 826 S. 18th St., St. Louis, Mo.

GAS AND GASOLINE ENGINES, continued

New Era Gas Engine Co., Dayton, O.
Northern Engineering Works, 3 Chene St., Detroit, Mich.
North Star Mfg. Co., Minneapolis, Minn.
Northwestern Iron Works, Seattle, Wash.
Oakes, William L., Decatur, Ill.
Ofeldt, F. W., & Sons, Foot W. 25th St., Brooklyn, N. Y.
Ohio Electric Works, Cleveland, O.
Ohio Motor Co., Sandusky, O.
Oil City Boiler Works, Oil City, Pa.
Oil Well Supply Co., Pittsburg, Pa.
Olds Motor Works, Detroit, Mich.
Otto Gas Engine Works, 33d & Walnut Sts., Philadelphia, Pa.
Oxford Mfg. Co., Oxford, Pa.
Palmer Bros., Mianus, Conn.
Pease Engine & Machine Works, Goshen, Ind.
Peerless Motor Co., Lansing, Mich.
Pennsylvania Iron Works, 50th St. & Lancaster Ave., Philda.
Perkins Launch & Motor Co., Gloucester, Mass.
Pierce-Crouch Engine Co., New Brighton, Pa.
Pierce Engine Co., Racine, Wis.
Pittsburg Gas Engine Co., Pittsburg, Pa.
Pohl, Geo. D., Mfg. Co., Vernon, N. Y.
Power & Mining Mchy. Co., 52 William St., New York.
Prouty Gasoline Locomotive Co., Lansing, Mich.
Prox & Brinkman, Mfg. Co., Terre Haute, Ind.
Racine Engine & Iron Works, Racine, Wis.
Reynolds, Graves & Co., Joplin, Mo.
Richmond & Holmes, St. Johns, Mich.
Roberts Engineering Co., Pittsburg, Pa.
Roberts Machine Co., East Palestine, O.
Robertson Mfg. Co., 1451 Niagara St., Buffalo, N. Y.
Root & Vandervoort Engineering Co., Champaign, Ill.
Royal Equipment Co., Bridgeport, Conn.
Ruger, J. W., Mfg. Co., Buffalo, N. Y.
Rusden Machine Co., Warren, R. I.
Sarvent Marine Engine Works, 26 W. Randolph St., Chicago.
Scott Motor Works, 2112 Washington Ave., St. Louis, Mo.
Sintz Gas Engine Co., Detroit, Mich.
Sipp Electric & Machine Works, Paterson, N. J.
Skillin & Richards Mfg. Co., 127 Fulton St., Chicago, Ill.
Smalley Motor Co., Bay City, Mich.
Smith, W. R., 262 W. 52d St., New York.
Snow Steam Pump Works, 114 Liberty St., New York.
Southwark Foundry & Machine Co., 430 Washington Av., Philadelphia, Pa.
Spade Engine Co., Vicksburg, Mich.
Springfield Gas Engine Co., Springfield, O.
Standard Motor Co., Kokomo, Ind.
Standard Pump & Engine Co., Cleveland, O.
Sterling Engine Co., Buffalo, N. Y.
Stover Engine Co., Freeport, Ill.
Struthers-Wells Co., Warren, Pa.
Superior Gas Engine Co., Springfield, O.
Thomas, E. R., Motor Co., Buffalo, N. Y.
Thomas, Richard H., 107 Liberty St., New York.
Thompson, J., & Sons, Mfg. Co., Beloit, Wis.
Titusville Iron Co., Titusville, Pa.

GAS AND GASOLINE ENGINES, continued

Trebert, H. L. F., & Co., Rochester, N. Y.
Truscott Boat Mfg. Co., St. Joseph, Mich.
Union Gas Engine Co., San Francisco, Cal.
Utica Gas Engine Works, Utica, N. Y.
Wall, R. C., Mfg. Co., 1334 Race St., Philadelphia, Pa.
Waltham Mfg. Co., Waltham, Mass.
Waterloo Motor Works, Waterloo, Ia.
Watkins, F. M., Cincinnati, O.
Weber Gas & Gasoline Engine Co., Kansas City, Mo.
Webster Mfg. Co., 1075 W. 15th St., Chicago, Ill.
Wellman-Seaver-Morgan Co., Cleveland, Ohio.
Welsh, F., 276-277 West St., New York.
Western Malleable & Grey Iron Mfg. Co., Milwaukee, Wis.
Westinghouse Machine Co., Pittsburg, Pa.
Whipple Cycle Co., 260 W. Jackson Blvd., Chicago, Ill.
White-Blakeslee Mfg. Co., Birmingham, Ala.
White & Middleton Gas Engine Co., Baltimore, Md.
Winkley Engineering Co., Lynn, Mass.
Witte Iron Works, Kansas City, Mo.
Wogaman Mfg. Co., Greenville, O.
Wolverine Motor Works, Grand Rapids, Mich.
Woolley Foundry & Machine Works, Anderson, Ind.

30 **HOISTING.** Reversing engines for mines, derricks, pile-drivers, coal handling, loading vessels, etc. Generally used in pairs.

Adams, W. T., Machine Co., Corinth, Miss.
Allentown Foundry & Machine Works, Allentown, Pa.
Allis-Chalmers Co., New York Life Bldg., Chicago, Ill.
Allman Gas Engine & Machine Co., 29-31 Sullivan St., N. Y.
Anderson, W. H., & Sons, Inc., Detroit, Mich.
Atlantic Works, 70 Borden St., E. Boston, Mass.
Atlas Engine Works, Indianapolis, Ind.
Aultman & Taylor Machinery Co., Mansfield, O.
Bath Iron Works, Bath, Me.
Bayley, William, & Sons Co., Milwaukee, Wis.
Best, John (Estate of), Lancaster, Pa.
Brown Hoisting Machinery Co., Cleveland, O.
Bucyrus Co., So. Milwaukee, Wis.
Byers, John F., Machine Co., Ravenna, O.
Carlin's, Thos., Sons Co., Allegheny, Pa.
Chandler & Taylor Co., Indianapolis, Ind.
Contractor's Plant Mfg. Co., Buffalo, N. Y.
Cooper, C. & G., Co., Mount Vernon, O.
Crawford & McCrimmon, Brazil, Ind.
Curry & Vannan, Danville, Pa.
Dake Engine Co., Grand Haven, Mich.
Dederick's, P. K., Sons, Albany, N. Y.
Dutton, C. H., Co., Kalamazoo, Mich.
Edwards, Joseph, & Co., 412 Water St., New York.
Fairbanks, Morse & Co., 172 Franklin St., Chicago, Ill.
Filer & Stowell Co., Ltd., Milwaukee, Wis.
Finch Mfg. Co., Scranton, Pa.
Flory, S., Mfg. Co., Bangor, Pa.
Frick Co., Waynesboro, Pa.
Fuller Iron Works, Providence, R. I.
Glover Machine Works, Marietta, Ga.
Great Lakes Engineering Works, Detroit, Mich.

HOISTING ENGINES, continued

Griffith & Wedge Co., Zanesville, O.
Hardie-Tynes Foundry & Machine Co., Birmingham, Ala.
Heilman Machine Works, Evansville, Ind.
Hendy, Joshua, Machine Works, San Francisco, Cal.
Herbertson's, J., Sons, Cadwallader, Pa.
Hercules Gas Engine Works, San Francisco, Cal.
Hunt, C. W., Co., 45 Broadway, New York.
Kendall, Edward, & Sons, Cambridgeport, Mass.
Kenney & Co., Scottdale, Pa.
Knowlson & Kelley Troy N. Y.
Lambert Hoisting Engine Co. Newark, N. J.
Lane & Bodley Co., Cincinnati, O.
Lidgerwood Mfg. Co., 96 Liberty St., New York.
Litchfield Foundry & Machine Works, Litchfield, Ill.
McKeown, H. J., Cincinnati, O. *See adv. page 16.*
Mayer Bros., Mankato, Minn.
Mecklenburg Iron Works, Charlotte, N. C.
Mietz, August, 128 Mott St., New York.
Monighan's Machine Works, 813 Carroll Ave., Chicago, Ill.
Morris County Machine & Iron Co., Dover, N. J.
Morris Machine Works, Baldwinsville, N. Y.
Motter, Geo. F., & Sons, York, Pa.
Mundy, J. S., 22 Prospect St., Newark, N. J.
Murray Iron Works Co., Burlington, Ia.
Nadig, H., & Bro., Mfg. Co., Allentown, Pa.
Naylor, John S., Girard Av. & Front St., Philadelphia, Pa.
Neafie & Levy Ship & Engine Bldg. Co., 1336 Beach St., Philadelphia, Pa.
Northwestern Iron Works, Seattle, Wash.
Norton & Cole Machinery Co., Cincinnati, O.
Oil City Boiler Works, Oil City, Pa.
Ottumwa Iron Works, Ottumwa, Ia.
Pacific Iron Works, Bridgeport, Conn.
Pawling & Harnischfeger, Milwaukee, Wis.
Portland Co., Inc., Portland, Me.
Prox & Brinkman Mfg. Co., Terre Haute, Ind.
Racine Engine & Iron Works, Racine, Wis.
Rarig Engineering Co., Columbus, O.
Rawson & Morrison Mfg. Co., Cambridgeport, Mass.
Roberts Engineering Co., Pittsburg, Pa.
Sintz Gas Engine Co., Detroit, Mich.
Sullivan Machinery Co., 135 Adams St., Chicago, Ill.
Superior Iron Works, West Superior, Wis.
Tod, William, Co., Youngstown, O.
Toledo Foundry & Machine Co., Toledo, O.
Townsend Furnace & Machine Shop, Albany, N. Y.
Vulcan Iron Works, San Francisco, Cal.
Weber Gas & Gasoline Engine Co., Kansas City, Mo.
Weimer Machine Works Co., Lebanon, Pa.
Wellman-Seaver-Morgan Co., Cleveland, Ohio.
Willamette Iron & Steel Works, Portland, Ore.
Williamson Bros., Richmond & York Sts., Philadelphia, Pa.

31 **HYDRAULIC.** Operated by water pressure.

Morse, Williams & Co., Frankford Ave., Shockamaxon St., Philadelphia, Pa. *See adv. page 20.*
Power Specialty Co., Buffalo, N. Y.

32 LOCOMOTIVE. Self-propelling engines.

Akron Electrical Mfg. Co., Akron, O.
American Locomotive Co., 25 Broad St., New York.
Armitage-Herschell Mfg. Co., North Tonawanda, N. Y.
Baldwin Locomotive Works, 500 N. Broad St., Philadelphia.
Byers, John F., Machine Co., Ravenna, O.
Climax Mfg. Co., Corry, Pa.
General Electric Co., Schenectady, N. Y.
Lima Locomotive & Machine Co., Lima, O.
Porter, H. K., Co., 547 Ward St., Pittsburg, Pa.
Portland Co., Inc., Portland, Me.
Rees, Jas., & Sons, Co., Pittsburg, Pa.
Risdon Iron & Locomotive Works, San Francisco, Cal.
Rogers Locomotive Co., Paterson, N. J.
Shelby Steel Tube Co., Pittsburg, Pa.
Vulcan Iron Works, San Francisco, Cal.
Wellman-Seaver-Morgan Co., Cleveland, O.

33 MARINE. For propelling vessels.

Adams, S., & Son, Rome, N. Y.
Adams, W. T., Machine Co., Corinth, Miss.
Allman Gas Engine & Machine Co., 29-31 Sullivan St., N. Y.
Armitage-Herschell Mfg. Co., North Tonawanda, N. Y.
Atlantic Works, East Boston, Mass.
Atlas Engine Works, Indianapolis, Ind.
Baltimore Ship Bldg. & Dry Dock Co., Baltimore, Md.
Bath Iron Works, Bath, Me.
Bay City Iron Co., Bay City, Mich.
Bell, David, Engineering Works, Buffalo, N. Y.
Bridgeport Machine & Motor Co., Bridgeport, Conn.
Buffalo Forge Co., Buffalo, N. Y.
Chicago Ship Building Co., 101st St. & Calumet River, Chicago, Ill.
Clark, E. S., 272 Freeport St., Boston, Mass.
Clark Engine & Boiler Co., Kalamazoo, Mich.
Colonial Foundry & Machine Co., S. Norwalk, Conn.
Corliss Gas Engine Co., 227 Folsom St., San Francisco, Cal.
Daimler Mfg. Co., Long Island City, N. Y.
Davenport Foundry & Machine Co., Davenport, Ia.
Delaware Machine Co., Wilmington, Del.
Dutton, C. H., Co., Kalamazoo, Mich.
Erie Pump & Engine Co., Erie, Pa.
Fay & Bowen Engine Co., Geneva, N. Y.
Fore River Ship & Engine Co., Quincy, Mass.
Gas Engine & Power Co., & Chas. L. Seabury Co., Morris Heights, N. Y.
Great Lakes Engineering Works, Detroit, Mich.
Grand Rapids Gas Engine & Yacht Co., Grand Rapids, Mich.
Herbertson's, J., Sons, Cadwallader, Pa.
Hercules Gas Engine Works, San Francisco, Cal.
Herreshoff Mfg. Co., Bristol, R. I.
Kensington Engine Works, 245 N. Broad St., Philadelphia, Pa.
Kehoe, Wm., & Co., Savannah, Ga.
Kingsford Foundry & Machine Works, Oswego, N. Y.
Lake City Engineering Co., Erie, Pa.
Lowell Model Co., No. Chelmsford, Mass.
Manistee Iron Works Co., Manistee, Mich.
Marine Iron Works, Clybourn & Southport Ave., Chicago, Ill.

MARINE ENGINES, continued

Mesta Machine Co., Pittsburg, Pa.
Mianus Motor Works, Mianus, Conn.
Mietz, August, 128 Mott St., New York.
Morris, I. P., Co., Philadelphia, Pa.
Morris Machine Works, Baldwinsville, N. Y.
Motter, Geo. F., & Sons, York, Pa.
Murray Iron Works Co., Burlington, Ia.
Nagle Boiler & Engine Co., Erie, Pa.
Neafie & Levy Ship & Engine Bldg. Co., 1336 Beach St., Phila.
Ohio Machine Co., Middleport, O.
Olin Gas Engine Co., Buffalo, N. Y.
Oil City Boiler Works, Oil City, Pa.
Pennsylvania Iron Works, 50th St. & Lancaster Ave., Philda.
Percy, Chas. W., 212 Summer St., Boston, Mass.
Pierce Engine Co., Racine, Wis.
Portland Co., Inc., Portland, Me.
Pusey & Jones Co., Wilmington, Del.
Queen City Engineering Co., Buffalo, N. Y.
Quintard Iron Works, 742 E. 12th St., New York.
Racine Engine & Iron Works, Racine, Wis.
Rees, Jas., & Sons Co., Pittsburg, Pa.
Reeves Engine Co., Trenton, N. J.
Risdon Iron & Locomotive Works, San Francisco, Cal.
Rochester Machine Tool Co., Rochester, N. Y.
Rusden Machine Co., Warren, R. I.
St. Louis Iron & Machine Works, St. Louis, Mo.
Sheriffs Mfg. Co., Milwaukee, Wis.
Sintz Gas Engine Co., Detroit, Mich.
Sipp Electric & Machine Works, Paterson, N. J.
Skinner & Arnold Co., Albany, N. Y.
Southwark Foundry & Machine Co., 430 Washington Av., Philadelphia, Pa.
Stickney, Henry R., Portland, Me.
Superior Shipbuilding Co., Superior, Wis.
Thropp, John E., & Sons Co., Trenton, N. J.
Toledo Foundry & Machine Co., Toledo, O.
Truscott Boat Mfg. Co., St. Joseph, Mich.
Twiss, Nelson W., New Haven, Conn.
Union Gas Engine Co., San Francisco, Cal.
Union Iron Works, San Francisco, Cal.
Waterloo Motor Works, Waterloo, Ia.
Willard, Chas. P., & Co., 2 S. Canal St., Chicago, Ill.
Williamette Iron & Steel Works, Portland, Ore.
Williamson Bros., Richmond & York Sts., Philadelphia, Pa.
Wing, L. J., Mfg. Co., 251 West Broadway, New York.
Wolverine Motor Works, Grand Rapids, Mich.

34 **Steering.** For moving the rudder of vessels by steam power, the valves being controlled by the steersman.

Chase Machine Co., Cleveland, O.
Fore River Ship & Engine Co., Quincy, Mass.
Neafie & Levy Ship & Engine Bldg. Co., 1336 Beach St., Philda.
Nichols, D. M., Iron Works, 2 Gouverneur Slip, New York.
Sheriffs Mfg. Co., Milwaukee, Wis.

35 **OIL.** See 29, Gas and Gasoline Engines.

American Diesel Engine Co., 11 Broadway, New York.

OIL ENGINES, continued.

Aultman Co., Canton, O.
Baldwin Locomotive Works, 500 N. Broad St., Philadelphia.
Best Mfg. Co., San Leandro, Cal.
De La Vergne Refrigerating Machine Co., foot of E. 138th St., New York.
Delaware Machine Co., Wilmington, Del.
General Power Co., 81 Fulton St., New York.
International Power Vehicle Co., Stamford, Conn.
Marine Engine & Machine Co., 80 Broadway, New York.
Mietz, August, 128-138 Mott St., New York.
New York Kerosene Oil Engine Co., 31 Burling Slip, N. Y.
Oil City Boiler Works, Oil City, Pa.
Otto Gas Engine Works, 332 Walnut St., Philadelphia, Pa.
Pittsburg Gas Engine Co., Pittsburg, Pa.
Rochester Machine Tool Co., Ltd., Rochester, N. Y.
Union Gas Engine Co., San Francisco, Cal.
Weber Gas & Gasoline Engine Co., Kansas City, Mo.

36 PORTABLE.

Advance Thresher Co., Battle Creek, Mich.
Allis-Chalmers Co., New York Life Bldg., Chicago, Ill.
American Road Machine Co., Kennett Square, Pa.
Ames Iron Works, Oswego, N. Y.
Armitage-Herschell Co., North Tonawanda, N. Y.
Atlantic Works, East Boston, Mass.
Atlas Engine Works, Indianapolis, Ind.
Aultman Co., Canton, O.
Aultman & Taylor Machinery Co., Mansfield, O.
Best, John (Estate of), Lancaster, Pa.
Best Mfg. Co., San Leandro, Cal.
Bovaird & Seyfang Mfg. Co., 34 Davis St., Bradford, Pa.
Brownell Co., Dayton, Ohio. *See adv. page 3.*
Buffalo Pitts Co., Buffalo, N. Y.
Burlingame & Son, Worcester, Mass.
Campbell, S. K., Central Bridge, N. Y.
Carlin's, Thos., Sons Co., Allegheny, Pa.
Case, J. I., Threshing Machine Co., Racine, Wis.
Charter Gas Engine Co., Sterling, Ill.
Colean Mfg. Co., Peoria, Ill
Dederick's, P. K., Sons, Albany, N. Y.
Dennison Electric Engine Co., New Haven, Conn.
Edwards, Jos., & Co., 412 Water St., New York.
Enterprise Mfg. Co., Columbiana, O.
Erie City Iron Works, Erie, Pa.
Erie Engine Works, Erie, Pa.
Fairbanks, Morse & Co., 172 Franklin St., Chicago, Ill.
Farquhar, A. B., Co., Ltd., York, Pa.
Fisher & Davis, 1024 N. Main St., St. Louis, Mo.
Flory, S., Mfg. Co., Bangor, Pa.
Frick Co., Waynesboro, Pa.
Fritz, Geo. J., Foundry & Machine Co., St. Louis, Mo.
Gaar, Scott & Co., Richmond, Ind.
Geiser Mfg. Co., Waynesboro, Pa.
Harder Mfg. Co., Cobleskill, N. Y.
Harrisburg Foundry & Machine Co., Harrisburg, Pa. *See adv. page 17.*
Harrison Machine Works, Belleville, Ill.

PORTABLE ENGINES, continued

Heilman Machine Works, Evansville, Ind.
Hench & Dromgold, York, Pa.
Hercules Gas Engine Works, San Francisco, Cal.
Huber Mfg. Co., Marion, O.
Hurlbut, W. M., Winona, Minn.
Jackson, Byron, Machine Works, San Francisco, Cal.
Kingsland Mfg. Co., St. Louis, Mo.
Lambert Gas & Gasoline Engine Co., Anderson, Ind.
Lane & Bodley Co., Cincinnati, O.
Lansing Boiler & Engine Works, Lansing, Mich.
Larzelere Machine Co., Williamsport, Pa.
Leffel, James, & Co., Springfield, O.
Lidgerwood Mfg. Co., 96 Liberty St., New York.
McEwen Bros., Wellsville, N. Y.
Marion Mfg. Co., Marion, O.
Marshutz & Cantrell, San Francisco, Cal.
Mecklenburg Iron Works, Charlotte, N. C.
Messinger Mfg. Co., Tatamy, Pa.
Middletown Machine Co., Middletown, O.
Mietz, August, 128 Mott St., New York.
Morris Machine Works, Baldwinsville, N. Y.
Motter Geo. F., & Sons, York, Pa.
Murray Iron Works Co., Burlington, Ia.
Nagle Engine & Boiler Works, Erie, Pa.
Neafie & Levy Ship & Engine Bldg. Co., 1336 Beach St., Philda.
New Birdsall Co., Auburn, N. Y.
Nichols & Shepard Co., Battle Creek, Mich.
Nordyke & Marmon Co., Indianapolis, Ind.
Northwest Thresher Co., Stillwater, Minn.
Norton & Cole Machinery Co, Cincinnati, O.
Oil City Boiler Works, Oil City, Pa.
Phoenix Iron Works, Meadville, Pa.
Portland Co., Inc., Portland, Me.
Rand Drill Co., 128 Broadway, New York.
Rawson & Morrison Mfg. Co., Cambridgeport, Mass.
Reeves & Co., Columbus, Ind.
Richmond Machine Works, Richmond, Ind.
Robinson & Co., Richmond, Ind.
Root & Vandervoort Engineering Co., Champaign, Ill.
Russell Engine Co., Massillon, O.
Salem Iron Works, Salem, N. C.
San Francisco Tool Works, San Francisco, Cal.
Scheidler, Reinhart, Newark, O.
Sinker-Davis Co., Indianapolis, Ind.
Skinner Engine Co., Erie, Pa.
Smalley Mfg. Co., Manitowoc, Wis.
Southern Engine & Boiler Works, Jackson, Tenn
Southwark Foundry & Machine Co, 430 Washington Ave, Philadelphia, Pa.
Spence, L., & Son, Martins Ferry, O.
Stevens, A. W. Co., Marinette, Wis.
Stickney, Chas. A., Co., St. Paul, Minn.
Struthers-Wells Co., Warren, Pa.
Union Machine Co., Zanesville, O.
Waterloo Motor Works, Waterloo, Ia.
Watertown Engine Co., Watertown, N. Y.
Weber Gas & Gasoline Engine Co., Kansas City, Mo.

PORTABLE ENGINES, continued

West Point Iron Works, West Point, Ga.
Willard, Chas. P. & Co., 2 S. Canal St., Chicago, Ill.
Williams Bros., Ithaca, N. Y.
Williams, White & Co., Moline, Ill.
Williamson Bros., Richmond & York Sts., Philadelphia, Pa.
Wing, L. J., Mfg. Co., 251 West Broadway, New York.

37 **PUMPING.** See 244, Pumping Engines.

38 **REVERSING.** See 30, Hoisting Engines.

39 **ROLLING MILL.** Reversing engines for driving rolls for working iron, steel, etc.

Allis-Chalmers Co., New York Life Bldg., Chicago, Ill.
Atlas Engine Works, Indianapolis, Ind.
Brownell Co., Dayton, O.
Cooper, C. & G., Co., Mount Vernon, O.
Filer & Stowell Co., Milwaukee, Wis.
Frick Co., Waynesboro, Pa.
Lane & Bodley Co., Cincinnati, O.
Mesta Machine Co., Pittsburg, Pa.
Minneapolis Steel & Machine Co., 2854 Minnehaha St., Minneapolis, Minn.
Murray Iron Works Co., Burlington, Iowa.
Naylor, John S., Girard Av. & Front St., Philadelphia, Pa.
Portland Co., Inc., Portland, Me.
Rarig Engineering Co., Columbus, O.
Rees, Jas., & Sons, Co., Pittsburg, Pa.
Southwark Foundry & Machine Co., 430 Washington Ave., Philadelphia, Pa.
Spence, L., & Son, Martins Ferry, O.
Totten & Hogg Iron & Steel Foundry Co., Pittsburg, Pa.
Wetherill, Robert, & Co., Chester, Pa.

40 **STEERING.** See 34, Marine Steering Engines.

41 **THROTTLING.** In which the speed is controlled by a fly-ball governor operating a valve in the steam pipe.

Ames Iron Works, Oswego, N. Y.
Best, John (Estate of), Lancaster, Pa.
Campbell, P. F., 55 Laurel St., Philadelphia, Pa.
Chandler & Taylor Co., Indianapolis, Ind.
Continental Gin Co., Birmingham, Ala.
Erie City Iron Works, Erie, Pa.
Erie Mfg. & Supply Co., Erie, Pa.
Frost Mfg. Co., Galesburg, Ill.
Geiser Mfg. Co., Waynesboro, Pa.
Greenwald, I. E., & Co., 720 E. Pearl St., Cincinnati, O.
Harrisburg Foundry & Machine Co., Harrisburg, Pa.
Kaestner, Chas., & Co., 241 So. Jefferson St., Chicago, Ill.
Kensington Engine Works, 245 N. Broad St., Philadelphia, Pa.
Lane & Bodley Co., Cincinnati, O.
Leffel, Jas., & Co., Springfield, O.
Liddell Co., Charlotte, N. C.
Mansfield Engineering Co., Mansfield, O.
Nagle Boiler & Engine Co., Erie, Pa.
Neafie & Levy, Ship & Engine Bldg Co., 1336 Beach St., Phila.

THROTTLING ENGINES, continued

New Britain Machine Co., New Britain, Conn. *See adv. page 6.*
New York Safety Steam Power Co., 113 Liberty St., N. Y.
Olney & Warrin, 36 Dey St., New York.
Oil City Boiler Works, Oil City, Pa.
Phoenix Mfg. Co., Eau Claire, Wis.
Rees, Jas., & Sons, Co., Pittsburg, Pa.
Reilly & Farron, 1154 N. 3d St., Philadelphia, Pa.
Richmond Machine Works, Richmond, Ind.
Smith, Myers & Schnier Co., Cincinnati, O.
Sturtevant, B. F., Co., Hyde Park, Mass.
Troy Engine & Machine Co., Troy, Pa.
Van Wie, Irvin, Syracuse, N. Y.
Watertown Engine Co., Watertown, N. Y.
Wehrfritz, E. C., Machinery & Supply Co., Little Rock, Ark.
Wing, L. J., Mfg. Co., 251 West Broadway, New York.

42 **TRACTION.** Self-propelling engines mounted on wheels and adapted to travel on ordinary roads.

Advance Thresher Co., Battle Creek, Mich.
Aultman & Taylor Machinery Co., Mansfield, O.
Aultman Co., Canton, O.
Benicia Agricultural Works, Benicia, Cal.
Best Mfg. Co., San Leandro, Cal.
Buffalo Pitts Co., Buffalo, N. Y.
Case, J. I., Threshing Machine Co., Racine, Wis.
Colean Mfg. Co., Peoria, Ill.
Cooper, C. & G., Co., Mount Vernon, O.
Farquhar, A. B., Co. Ltd., York, Pa.
Frick Co., Waynesboro, Pa.
Gaar Scott & Co., Richmond, Ind.
Geiser Mfg. Co., Waynesboro, Pa.
Gibbs Engineering & Mfg. Co., Glendale, L. I., N. Y.
Harrison Machine Works, Belleville, Ill.
Hart-Parr Co., Charles City, Ia.
Heilman Machine Works, Evansville, Ind.
Hench & Dromgold, York, Pa.
Holt Mfg. Co., Stockton, Cal.
Huber Mfg. Co., Marion, O.
Jackson, Byron, Machine Works, San Francisco, Cal.
June, D., & Co., Fremont, O.
Keck, Gonnermann & Co., Mt. Vernon, Ind.
Kelly, O. S., Co., Springfield O.
Kingsland Mfg. Co., St. Louis, Mo.
Lang, John B., Ithaca, N. Y.
Marion Mfg. Co., Marion, O.
Massillon Engine & Thresher Co., Massillon, O.
Minnesota Thresher Co., Stillwater, Minn.
New Birdsall Co., Auburn, N. Y.
Nichols & Shepard Co., Battle Creek, Mich.
Port Huron Engine & Thresher Co., Port Huron, Mich.
Prouty Gasoline Locomotive Co., Ltd., Lansing, Mich.
Reeves & Co., Columbus, O.
Robinson & Co., Richmond, Ind.
Rumely, M., Co., La Porte, Ind.
Russell Engine Co., Massillon, O.
Scheidler, Reinhart, Newark, O.

TRACTION ENGINES, continued

Spence, L., & Son, Martins Ferry, O.
Stevens, A. W., Co., Marinette, Wis.
Waterloo Motor Works, Waterloo, Ia.
Watertown Engine Co., Watertown, N. Y.
Westinghouse Co., Schenectady, N. Y.
Williamette Iron & Steel Works, Portland, Ore.
Wing, L. J., Mfg. Co., 251 West Broadway, New York.

43 **TRIPLE EXPANSION.** In which the steam expands in three stages, passing through one or more cylinders.

Allis-Chalmers Co., New York Life Bldg., Chicago, Ill.
Atlantic Works, 70 Border St., East Boston, Mass.
Ball & Wood Co., 17 Battery Place, New York.
Bath Iron Works, Bath, Me.
Cooper, C. & G., Mt. Vernon, Ohio.
Harrisburg Foundry & Machine Co., Harrisburg, Pa.
Hewes & Phillips Iron Works, Newark, N. J.
Lane & Bodley Co., Cincinnati, O.
Nagle Engine & Boiler Works, Erie, Pa.
Naylor, John S., Girard Av. & Front St., Philadelphia, Pa.
Neafie & Levy Ship & Engine Bldg. Co., 1336 Beach St., Philda.
Oil City Boiler Works, Oil City, Pa.
Southwark Foundry & Machine Co., 430 Washington Ave., Philadelphia, Pa.
Watertown Engine Co., Watertown, N. Y.
Wellman-Seaver-Morgan Co., Cleveland, Ohio.

43A **TURBINE.** Impulse or reaction motors, the wheel which carries the vanes or buckets being driven by steam escaping from nozzles.

Allis-Chalmers Co., New York Life Bldg., Chicago, Ill.
American Blower Co., Detroit, Mich.
Brady, John F., Turbine Co., 43 Fulton St., Chicago, Ill.
De Laval Steam Turbine Co., 74 Cortlandt St., New York.
General Electric Co., Schenectady, N. Y.
Hooven, Owens & Rentschler Co., Hamilton, O.
Westinghouse Machine Co., Pittsburg, Pa.

44 **VERTICAL.** Having the cylinders placed vertically over the crank shaft.

American Road Machine Co., Kennett Square, Pa.
Ball Engine Co., Erie, Pa.
Ball & Wood Co., 17 Battery Place, New York.
Barnes, Charles Co., 53 Main St., Cincinnati, O.
Bath Iron Works, Bath, Me.
Born, J. C., & Bro., Machine Works, Belleville, Ill.
Burrell, D. H., & Co., Little Falls, N. Y.
Cooper, C. & G., Mt. Vernon, Ohio.
Dopp, H. Wm., & Son, Buffalo, N. Y.
Erie Mfg. & Supply Co., Erie, Pa.
International Boiler Works Co., East Stroudsburg, Pa.
Lane & Bodley Co., Cincinnati, O.
Leffel, James, & Co., Springfield, O.
Mansfield Engineering Co., Mansfield, O.
Minneapolis Steel & Machinery Co., 2854 Minnehaha Ave., Minneapolis, Minn.

351693

VERTICAL ENGINES, continued.

Murray Iron Works Co., Burlington, Iowa.
Nagle Boiler & Engine Co., Erie, Pa.
Naylor, John S., Girard Av. & Front St., Philadelphia, Pa.
Neafie & Levy Ship & Engine Bldg. Co., 1336 Beach St., Phila.
New Britain Machine Co., New Britain, Conn.
Oil City Boiler Works, Oil City, Pa.
Olney & Warrin, 36 Dey St., New York.
Pohl, Geo. D., Mfg. Co., Vernon, N. Y.
Quincy Engine Works, Quincy, Ill.
St. Louis Steam Engine Co., St. Louis, Mo.
Shepherd Engineering Co., Franklin, Pa.
Southwark Foundry & Machine Co., 430 Washington Av., Philadelphia, Pa.
Strait, H. N., Mfg. Co., Kansas City, Kan.
Superior Iron Works, West Superior, Wis.
Troy Engine & Machine Co., Troy, Pa.
Twiss, Nelson W., New Haven, Conn.
Van Wie, Irvin, Syracuse, N. Y.
Watertown Engine Co., Watertown, N. Y.
Webster Mfg. Co., 1075 West 15th St., Chicago, Ill.
Westinghouse Machine Co., Pittsburg, Pa.

44A MOTORS.

44B GAS AND GASOLINE. See 29, Gas and Gasoline Engines.

44C PNEUMATIC.

Baird Portable Machine Co., Topeka, Kans.
Chicago Pneumatic Tool Co., Fisher Bldg., Chicago, Ill.
Empire Engine & Motor Co., Orangeburg, N. Y.
Helwig Mfg. Co., St. Paul, Minn.
Pilling Air Engine Works, Bucyrus, O.
Rand Drill Co., 128 Broadway, New York.
Standard Railway Equipment Co., Union Trust Bldg., St. Louis, Mo.
Stow Flexible Shaft Co., 26th & Callowhill St., Philadelphia.

44D WATER.

Backus Water Motor Co., Newark, N. J.
Cassel Auto Water Motor Co., Seattle, Wash.
Goubls Mfg. Co., Seneca Falls, N. Y.
Pelton Water Wheel Co., 127 Main St., San Francisco, Cal.
Perkins, B. F., & Son, Holyoke, Mass. *See adv. page 2j.*
Power Specialty Co., Buffalo, N. Y.
Specialty Mfg. Co., Indianapolis, Ind.
Standard Water Meter Co., 245 Robinson St., Brooklyn, N. Y.

45 STEAM APPLIANCES IN GENERAL.

46 **ALARMS, LOW WATER.** For automatically signalling when the water in the boiler falls below the proper level.

Blake, George F., Mfg. Co., 114 Liberty St., New York.
Clow, J. B., & Sons, Cor. Harrison & Franklin Sts., Chicago.
Erie Mfg. & Supply Co., Erie, Pa.
Griffing, A. A., Iron Co., 449 Communipaw Ave., Jersey City.
Hills-McCanna Co., 138 E. Kinzie St., Chicago, Ill.
Knowles Steam Pump Works, 114 Liberty St., New York.
Lonergan, J. E., & Co., 211 Race St., Philadelphia, Pa.
Lunkenheimer Co., Cincinnati, O.
Michigan Lubricator Co., Detroit, Mich.
Pittsburgh Gage & Supply Co., Pittsburg, Pa.
Reliance Gauge Column Co., Cleveland, O. *See adv. page 15.*
Robertson, Jas. L., & Sons, 204 Fulton St., New York.
Scranton Steam Pump Co., Scranton, Pa.
Sims Co., Erie, Pa.
Wright Mfg. Co., Detroit, Mich.

46A **CALIPERS, FLUE OR TUBE.** For ascertaining the internal condition of flues or tubes.

Mellor, L. Bancroft, 14 S. 4th St., Philadelphia, Pa.

46B **CIRCULATORS, FEED WATER.** For equalizing the temperature in all parts of a boiler.

Bloomsburg, H., & Co., 700 Dolphin St., Baltimore, Md.
Whitlock Coil Pipe Co., Hartford, Conn.

47 **CLAMPS, STEAM.** For stopping leaks in elbows, tees, valves or other fittings.

Belfield, H., & Co., 435 N. Broad St., Philadelphia, Pa.
Crane Co., 10 N. Jefferson St., Chicago, Ill.
McCrea, James, & Co., 67 W. Washington St., Chicago, Ill.
Nusbaum, F. A., Dayton, Ohio. *See adv. page 15.*

48 **CLEANERS, BOILER, MECHANICAL.** For cleansing boilers by means of a circulation of water.

Erie Mfg. & Supply Co., Erie, Pa.
Freeport Plumbing & Heating Co., Freeport, Ill.
Gem Mfg. Co., Pittsburg, Pa.
Manchester Mfg. Co., North Manchester, Ind.
Mechanical Boiler Cleaner Co., Western Union Bldg., Chicago.
Robertson, Jas. L., & Sons, 204 Fulton St., New York.
Sims Co., Erie, Pa.
Standard Boiler Cleaner Co., Quincy, Ill.
Thompson, Richard, & Co., 126 Liberty St., New York.

49 **Flue or Tube.** For cleansing the flues of boilers.

Belfield, H., & Co., 435 N. Broad St., Philadelphia, Pa.
Bonar, Jas., & Co., Inc., Pittsburg, Pa.
Boston Brass Co., 36 Oliver St., Boston, Mass.
Bushnell, John S., Co., 126 Liberty St., New York.
Butman Boiler Furnace Co., Monadnock Blk., Chicago, Ill.

CLEANERS, FLUE OR TUBE, continued.

Champion Flue Scraper Co., Peoria, Ill.
Cleveland Flue Cleaner Mfg. Co., Cleveland, O.
Cochrane, J. A., Cleveland, O.
Coggeshall Mfg. Co., Branford, Conn.
Crane Co., 10 N. Jefferson St., Chicago, Ill.
Doolittle, S. B., & Son, Binghamton, N. Y.
Erie Mfg. & Supply Co., Erie, Pa.
Faries Mfg. Co., Decatur, Ill.
Forest City Brass Works, Cleveland, O.
Gem Mfg. Co., Pittsburg, Pa.
Globe Brass Works, Detroit, Mich.
Jackson Flue Scraper Co., Jackson, Mich.
Jarecki Mfg. Co., Erie, Pa.
Lagonda Mfg. Co., Springfield, O.
Liberty Mfg. Co., Pittsburg, Pa.
McCrae, James, & Co., 67 W. Washington St., Chicago, Ill.
Mann-McCann Co., 1210 Fisher Bldg., Chicago, Ill.
Michigan Lubricator Co., Detroit, Mich.
Maurer, Labadie & Co., South Bend, Ind.
Pedrick & Ayer Co., Plainfield, N. J.
Pierce, William B., Co., Buffalo, N. Y.
Pilley Packing & Flue Brush Mfg. Co., St. Louis, Mo.
Power Specialty Co., Buffalo, N. Y.
Robertson, Jas. L., & Sons, 204 Fulton St., New York.
Rollins Flue Cleaner Co., Albany, N. Y.
Scranton Steam Pump Co., Scranton, Pa.
Sherwood Mfg. Co., Buffalo, N. Y.
Sims Co., Erie, Pa.
Stephenson Mfg. Co., Albany, N. Y.
Stewart Heater Co., Buffalo, N. Y. *See adv. page 9.*
St. John, G. C., 143 Liberty St., New York.
Thompson, Richard, & Co., 126 Liberty St., New York.
Wing, J. T., & Co., Detroit, Mich.

50 **COCKS, GAGE.** Stop cocks attached to boilers, for indicating the height of the water.

American Steam Gauge & Valve Mfg. Co., 220 Camden St., Boston, Mass.
Ashton Valve Co., 271 Franklin St., Boston, Mass.
Bailey-Farrell Mfg. Co., Pittsburg, Pa.
Belfield, H., & Co., 435 N. Broad St., Philadelphia, Pa.
Belknap Mfg. Co., Bridgeport, Conn.
Bonar, James, & Co., Inc., Pittsburg, Pa.
Bordo, L. J., Co., 12th and Thompson Sts., Philadelphia, Pa.
Boston Steam Specialty Co., 170 Congress St., Boston, Mass. *See adv. page 14.*
Buckeye Iron & Brass Works, Dayton, O.
Central Brass Works, Cincinnati, O.
Chaplin-Fulton Mfg. Co., Pittsburg, Pa.
Cochrane, J. A., Cleveland, O.
Crane Co., 10 N. Jefferson St., Chicago, Ill.
Crosby Steam Gage & Valve Co., 97 Oliver St., Boston, Mass.
D'Este, Julian Co., 24 Canal St., Boston, Mass.
Eastwood Wire Mfg. Co., Belleville, N. J.
Eaton, Cole & Burnham Co., 253 Broadway, New York.
Erie Mfg. & Supply Co., Erie, Pa.

COCKS, GAGE, continued

Everhart Brass Works, Scranton, Pa.
Fairbanks Co., Broome & Elm Sts., New York.
Farnan Brass Works, Cleveland, O.
Globe Brass Works, Detroit, Mich.
Haydenville Co., Haydenville, Mass.
Hills-McCanna Co., 128 E. Kinzie St., Chicago, Ill.
Homer & Poole, 2311 Race St., Philadelphia, Pa.
Jarecki Mfg. Co., Erie, Pa.
Jenkins Bros., 71 John St., New York.
Lehigh Valley Brass Works, South Bethlehem, Pa.
Lunkenheimer Co., Cincinnati, Ohio. *See adv. page 22.*
Lonergan, J. E., & Co., 211 Race St., Philadelphia, Pa.
McNab & Harlin Mfg. Co., 56 John St., New York.
McRae & Roberts Co., Detroit, Mich.
Michigan Lubricator Co., Detroit, Mich.
Ohio Brass Co., Mansfield, O.
Penberthy Injector Co., Detroit, Mich.
Pittsburgh Gage & Supply Co., Pittsburg, Pa. *See adv. pages 10-11.*
Powell, Wm., Co., Cincinnati, O.
Pratt & Cady Co., Hartford, Conn.
Reliance Gauge Column Co., Cleveland, O. *See adv. page 15.*
Schaeffer & Budenberg Mfg. Co., St. Edwards & Bedford Sts., Brooklyn, N. Y.
Sherwood Mfg. Co., Buffalo, N. Y.
Springfield Brass Co., Springfield, O.
Star Brass Mfg. Co., 114 E. Dedham St., Boston, Mass.
Walworth Mfg. Co., 134 Federal St., Boston, Mass.
Williams Gauge Co., Pittsburg, Pa.
Wright Mfg. Co., Detroit, Mich.

51 **COLUMNS, WATER, PLAIN.** For holding the gage cocks and water glasses.

American Steam Gauge & Valve Mfg. Co., 220 Camden St., Boston, Mass.
Ashton Valve Co., 271 Franklin St., Boston, Mass.
Belfield, H., & Co., 435 N. Broad St., Philadelphia, Pa.
Best Mfg. Co., Pittsburg, Pa.
Buckeye Iron & Brass Works, Dayton, O.
Central Brass Works, Cincinnati, O.
Crane Co., 10 N. Jefferson St., Chicago, Ill.
Crosby Steam Gage & Valve Co., 97 Oliver St., Boston, Mass.
Griffing, A. A., Iron Co., 449 Communipaw Ave., Jersey City.
Illinois Malleable Iron Co., 32 W. Monroe St., Chicago, Ill.
Jarecki Mfg. Co., Erie, Pa.
Kelly & Jones Co., Greensburg, Pa.
Kitts Mfg. Co., Oswego, N. Y.
Lonergan, J. E., & Co., 211 Race St., Philadelphia, Pa.
Lunkenheimer Co., Cincinnati, O.
McNab & Harlin Mfg. Co., 56 John St., New York.
Michigan Lubricator Co., Detroit, Mich.
Ohio Brass Co., Mansfield, O.
Pittsburgh Gage & Supply Co., Pittsburg, Pa. *See adv. pages 10-11.*
Powell, William, Co., Cincinnati, O.
Queen City Brass & Iron Works, Cincinnati, O.

COLUMNS, WATER, PLAIN, continued

Reliable Water Gauge Co., 1616 Pine St., St. Louis, Mo.
Rutzler, E., 178 Centre St., New York.
Schaeffer & Budenberg Mfg. Co., St. Edwards & Bedford Sts., Brooklyn, N. Y.
Star Brass Mfg. Co., 114 E. Dedham St., Boston, Mass.
Walworth Mfg. Co., 134 Federal St., Boston, Mass.

52 **Water, Safety.** Containing signal apparatus for indicating high or low water.

American Steam Gauge & Valve Mfg. Co., 220 Camden St., Boston, Mass.
Belfield, H., & Co., 435 N. Broad St., Philadelphia, Pa.
Best Mfg. Co., Pittsburg, Pa.
Binghamton Machine Tool Works, Binghamton, N. Y.
Clark Bros. Co., Vicksburg, Mich.
Crane Co., 10 N. Jefferson St., Chicago, Ill.
Detroit Lubricator Co., Detroit, Mich.
Erie Mfg. & Supply Co., Erie, Pa.
Jarvis Engine & Machine Co., Lansing, Mich.
Kitts Mfg. Co., Oswego, N. Y.
Lonergan, J. E., & Co., 211 Race St., Philadelphia, Pa.
Lunkenheimer Co., Cincinnati, O.
McNab & Harlin Mfg. Co., 56 John St., New York.
Pittsburgh Gage & Supply Co., Pittsburg, Pa. *See adv. pages 10-11.*
Reliance Gauge Column Co., Cleveland, O. *See adv. page 15.*
Rutzler, E., 178 Centre St., New York.
Scranton Steam Pump Co., Scranton, Pa.
Williams Gauge Co., Pittsburg, Pa.
Wright Mfg. Co., Detroit, Mich.

53 **CONDENSERS, STEAM.** For condensing exhaust steam in steam engines.

Alberger Condenser Co., 95 Liberty St., New York.
Ashcroft Mfg. Co., 85 Liberty St., New York.
Baragwanath, William, & Son, 54 W. Division St., Chicago, Ill.
Bath Iron Works, Bath, Me.
Blake, Geo. F., Mfg. Co., 114 Liberty St., New York.
Conover Mfg. Co., Jersey City, N. J.
Crane Co., 10 N. Jefferson St., Chicago, Ill.
Deane Steam Pump Co., Holyoke, Mass.
Eynon-Evans Mfg. Co., 1519 Clearfield St., Philadelphia, Pa.
Great Lakes Engineering Works, Detroit, Mich.
International Steam Engineering Co., Atlanta, Ga.
International Steam Pump Co., 114 Liberty St., New York.
Jeanesville Iron Works Co., Jeanesville, Pa.
Knowles Steam Pump Works, 114 Liberty St., New York.
Laidlaw-Dunn-Gordon Co., 114 Liberty St., New York.
Lane & Bodley Co., Cincinnati, O.
Minneapolis Steel & Machinery Co., 2854 Minnehaha Ave., Minneapolis, Minn.
National Equipment Co., Holland Bldg., St. Louis, Mo.
Nordberg Mfg. Co., Milwaukee, Wis.
Schutte & Korting Co., 12th & Thompson Sts., Philadelphia.
Scranton Steam Pump Co., Scranton, Pa.

CONDENSERS, STEAM, continued.

Southwark Foundry & Mche. Co., 430 Washington Ave., Philadelphia, Pa.
Springfield Elevator & Pump Co., Springfield, Mass.
Stewart Heater Co., Buffalo, N. Y. *See adv. page 9.*
Stilwell-Bierce & Smith-Vaile Co., Dayton, O.
Sturtevant, B. F., Co., Hyde Park, Mass.
Taunton Locomotive Mfg. Co., Taunton, Mass.
Warren Steam Pump Co., Warren, Mass.
Wheeler Condenser & Engineering Co., 42 Broadway, N. Y.
Whitlock Coil Pipe Co., Hartford, Conn. *See adv. page 12.*
Worthington, Henry R., 114 Liberty St., New York.

54 **COUNTERS, REVOLUTION.** For registering revolutions, or strokes of reciprocating parts.

American Steam Gauge & Valve Mfg. Co., 220 Camden St., Boston, Mass.
Ashcroft Mfg. Co., 85 Liberty St., New York.
Ashton Valve Co., 271 Franklin St., Boston, Mass.
Belfield, H., & Co., 435 N. Broad St., Philadelphia, Pa.
Crosby Steam Gauge & Valve Co., 97 Oliver St., Boston, Mass.
Marsh, Jas. P., & Co., 224 Washington St., Chicago, Ill.
Pittsburgh Gage & Supply Co., Pittsburg, Pa. *See adv. pages 10-11.*
Root, C. J., Bristol, Conn.
Schaeffer & Budenberg Mfg. Co., St. Edwards & Bedford Sts., Brooklyn, N. Y.
Standard Gauge Mfg. Co., Syracuse, N. Y.
Star Brass Mfg. Co., 114 E. Dedham St., Boston, Mass.
Tabor Mfg. Co., 18th & Hamilton Sts., Philadelphia, Pa.
Utica Steam Gage Co., Frankfort, N. Y.
Woodman Mfg. & Supply Co., 63 Oliver St., Boston, Mass.

55 **ECONOMIZERS, FUEL.** For utilizing the heat of boiler furnace gases.

Broomell, Schmidt & Steacy Co., Ltd., York, Pa.
Green Fuel Economizer Co., Matteawan, N. Y.
Hussey, McCann & Co., 37 Dey St., New York.
National Equipment Co., Holland Bldg., St. Louis, Mo.
Sturtevant, B. F., Co., Hyde Park, Mass.

56 **Steam.**. For absorbing the heat in the chimney gases.

American District Steam Co., Lockport, N. Y.
Hussey, McCann & Co., 37 Dey St., New York.
National Steam Economizer Co., Norwich, Conn.

57 **EJECTORS.** For lifting and ejecting fluids by the inductive action of a fluid under pressure.

American Injector Co., Detroit, Mich.
Belfield, H., & Co., 435 N. Broad St., Philadelphia, Pa.
Blakeslee Mfg. Co., Du Quoin, Ill.
Boston Steam Specialty Co., 170 Congress St., Boston, Mass. *See adv. page 14.*
Chaplin-Fulton Mfg. Co., Pittsburg, Pa.
Eagle Lubricator Co., 106 Canal St., Cleveland, O.
Erwin & Co., 35 N. Canal St., Chicago, Ill.
Eynon-Evans Mfg. Co., 1519 Clearfield St., Philadelphia, Pa.

EJECTORS, continued

Forest City Brass Works, Cleveland, O.
Griffiths, Jas. A., 500 N. 12th St., Philadelphia, Pa.
Hancock Inspirator Co., 89 Liberty St., New York.
Hayden & Derby Mfg. Co., 89 Liberty St., New York.
Lee Mfg. Co., Port Huron, Mich.
Lonergan, J. E., & Co., 211 Race St., Philadelphia, Pa.
McGowan, John H., Co., Cincinnati, O.
McNab & Harlin Mfg. Co., 56 John St., New York.
Maurer, Labadie & Co., South Bend, Ind.
Nason Mfg. Co., 71 Fulton St., New York.
Nathan Mfg. Co., 92 Liberty St., New York.
Ohio Injector Co., Wadsworth, O.
Penberthy Injector Co., Detroit, Mich.
Perkins, B. F., & Son, Holyoke, Mass. *See adv. page 24.*
Rue Mfg. Co., 215 Race St., Philadelphia, Pa.
Schaeffer & Budenberg Mfg. Co., St. Edwards & Bedford Sts., Brooklyn, N. Y.
Schutte & Korting Co., 12th & Thompson Sts., Philadelphia.
Sellers, Wm., Co., Philadelphia, Pa.
Sherwood Mfg. Co., Buffalo, N. Y.
Steam Appliance Co., 241 Greenfield Ave., Milwaukee, Wis.
Stephens, Roe, Mfg. Co., Detroit, Mich.
Tranter-Davison Mfg. Co., Pittsburg, Pa.
Van Duzen, E. W., Co., Cincinnati, O.
Van Wie, Irvin, Syracuse, N. Y.
Watson, N. A., Erie, Pa.
Watson & McDaniel Co., 146 N. 7th St., Philadelphia, Pa. *See adv. page 12.*
Zero Valve & Brass Mfg. Co., Buffalo, N. Y.

58 **ELIMINATORS.** See 128, Separators, Steam.

59 **EXHAUST HEADS.** For catching condensation and oil from steam exhaust pipes, preventing deposits on surroundings.

Acton, John, 118 John St., Brooklyn, N. Y.
American Spiral Pipe Works, 1173 S. Paulina St., Chicago, Ill.
Belfield, H., & Co., 435 N. Broad St., Philadelphia, Pa.
Bingham & Co., Camden, N. J.
Bonar, Jas., & Co., Inc., Pittsburg, Pa.
Burt Mfg. Co., Akron, O.
Crawford, P. R., Heating & Mfg. Co., Cleveland, O.
De Rycke, Joseph, 41 Cortlandt St., New York.
Direct Separator Co., Syracuse, N. Y.
Gardner Governor Co., Quincy, Ill.
Griffing, A. A., Iron Co., 449 Communipaw Ave., Jersey City.
Hoppes Mfg. Co., Springfield, O.
Hussey, McCann & Co., 37 Dey St., New York.
Kelley, Benjamin F., & Son, 91 Liberty St., New York. *See adv. page 14.*
Keystone Engine & Machine Works, 5th & Buttonwood Sts., Philadelphia, Pa.
Lee, Thos., Cincinnati, O.
Lyman, W. C., 49 Michigan St., Chicago, Ill.
McGowan, John H., Co., Cincinnati, O.
Maypole Bros., 60 S. Canal St., Chicago, Ill.
Patterson, Frank L., & Co., 26 Cortlandt St., New York.
Pittsburgh Gage & Supply Co., Pittsburg, Pa. *See adv. pages 10-11.*

EXHAUST HEADS, continued.

Prentice, L. H. Co., 24 Sherman St., Chicago, Ill.
Robertson, Jas. L., & Sons, 204 Fulton St., New York.
Rutzler, E., 178 Centre St., New York.
Sims Co., Erie, Pa.
Standard Steam Specialty Co., 111 5th Ave., New York.
Sterling Blower & Pipe Mfg. Co., Hartford, Conn.
Sturtevant, B. F., Co., Hyde Park, Mass.
Thompson, Richard, & Co., 126 Liberty St., New York. *See adv. page 5.*
Thorpe, Platt & Co., 97 Cedar St., New York. *See adv. page 14.*
Variety Mfg. Co., 77 W. Lake St., Chicago, Ill.
Watson & McDaniel Co., 146 N. 7th St., Philadelphia, Pa. *See adv. page 12.*
Whitlock Coil Pipe Co., Hartford, Conn. *See adv. page 12.*
Wright Mfg. Co., Detroit, Mich.

60 **EXPANDERS, BOILER TUBE.** For expanding the tubes of boilers.

Aultman & Taylor Mchy. Co., Mansfield, Ohio.
Bullock, C. K., 1361 Ridge Ave., Philadelphia, Pa.
Crane Co., 10 N. Jefferson St., Chicago, Ill.
Dudgeon, Richard, 82 Broome St., New York.
Faessler, John, Mfg. Co., Moberly, Mo.
Hayes, Harrison, Tool Co., Portland, Me.
Henderer's, A. L., Sons, Wilmington, Del.
Lee & Hoff Mfg. Co., St. Paul, Minn.
Oswego Tool Co., Oswego, N. Y.

61 **EXTRACTORS, GREASE.** For extracting oil or grease from steam.

Acton, John, 118 John St., Brooklyn, N. Y.
American District Steam Co., Lockport, N. Y.
Austin Separator Co., Detroit, Mich.
Baldwin Engineering Co., 107 W. 17th St., New York.
Baum Separator & Machine Co., Manheim, Pa.
Bushnell, John S., Co., 126 Liberty St., New York.
De Rycke, Joseph, 41 Cortlandt St., New York.
Direct Separator Co., Syracuse, N. Y.
Griffing, A. A. Iron Co., 449 Communipaw Ave., Jersey City,
Harrison Safety Boiler Works, 17th & Clearfield Sts., Philda.
Hoppes Mfg. Co., Springfield, O.
Hussey, McCann & Co., 37 Dey St., New York.
Kaestner, Charles, & Co., 241 S. Jefferson St., Chicago, Ill.
Keystone Engine & Machine Works, 5th & Buttonwood Sts., Philadelphia, Pa.
Kieley & Mueller, 34 W. 13th St., New York.
Lunkenheimer Co., Cincinnati, O.
Mosher Water Tube Boiler Co., 1 Broadway, New York.
Providence Steam Trap Co., Providence, R. I.
Robertson, Jas. L., & Sons, 204 Fulton St., New York.
Schaeffer & Budenberg Mfg. Co., St. Edwards & Bedford Sts., Brooklyn, N. Y.
Scranton Steam Pump Co., Scranton, Pa.
Sims Co., Erie, Pa.
Standard Steam Specialty Co., 111 5th Ave., New York.
Stewart Heater Co., Buffalo, N. Y.

EXTRACTORS, GREASE, continued.

Thompson, Richard, & Co., 126 Liberty St., New York. *See adv. page 5.*
Watson & McDaniel Co., 146 N. 7th St., Philadelphia, Pa.
Webster, Warren, & Co., Camden, N. J.

62 **FEEDERS, BOILER.** For feeding water to boilers that operate under low pressure of steam, and where water under pressure is not available.

American Injector Co., Detroit, Mich.
American Steam Pump Co., Battle Creek, Mich.
Davis, G. M., Regulator Co., 144 Milwaukee Ave., Chicago, Ill.
Foster, F. W., Mfg. Co., 99 Haverhill St., Boston, Mass.
Gardner Governor Co., Quincy, Ill.
Goulds Mfg. Co., Seneca Falls, N. Y.
Hancock Inspirator Co., 89 Liberty St., New York.
Hayden & Derby Mfg. Co., 89 Liberty St., New York.
Kieley & Mueller, 34 W. 13th St., New York.
McNab & Harlin Mfg. Co., 56 John St., New York.
Nason Mfg. Co., 71 Fulton St., New York.
Schaeffer & Budenberg Mfg. Co., St. Edwards & Bedford Sts., Brooklyn, N. Y.
Standard Steam Specialty Co., 111 5th Ave., New York.

63 **Boiler Compound.** For feeding compound to boilers.

Eagle Oil & Supply Co., 104 Broad St., Boston, Mass.
Hancock Inspirator Co., 89 Liberty St., New York.
Lee Mfg. Co., Port Huron, Mich.
Lunkenheimer Co., Cincinnati, O.
Powell, Wm, Co.. Cincinnati, O.
Robertson, James L., & Sons, 204 Fulton St., New York.
Sims Co., Erie, Pa.

64 **Boiler Oil.** For feeding oil to furnaces of boilers, the oil being used for fuel.

Clum, P. A., & Co., Rochester, N. Y.
Davis, G. M., Regulator Co., 100 N. Clinton St., Chicago, Ill.
Detroit Lubricator Co., Detroit, Mich.
Hancock Inspirator Co., 89 Liberty St., New York.
Lee Mfg. Co., Port Huron, Mich.
Lunkenheimer Co., Cincinnati, Ohio. *See adv. page 22.*
McRae & Roberts Co., Detroit, Mich.
Michigan Lubricator Co., Detroit, Mich.
Pittsburgh Gage & Supply Co., Pittsburg, Pa.
Powell, Wm., Co., Cincinnati, O.
Sims Co., Erie, Pa.
Star Brass Mfg. Co., 114 E. Dedham St., Boston, Mass.
Talmage Mfg. Co., Cleveland, O.
Watts Regulator Co., Lawrence, Mass.

65 **FILTERS, FEED WATER.** For purifying the feed water of steam boilers.

Acton, John, 118 John St., Brooklyn, N. Y.
Baragwanath, Wm., & Son, 54 W. Division St., Chicago, Ill.
Bates Machine Co., Joliet, Ill.
Erie Machine Works, Erie, Pa.
Hammond Iron Works, Warren, Pa.

FILTERS, FEED WATER, continued.

Harrison Safety Boiler Works, 17th & Clearfield Sts., Philada.
Hayden & Derby Mfg. Co., 89 Liberty St., New York.
Hoppes Mfg. Co., Springfield, O.
McGowan, John H., Co., Cincinnati, O.
Monitor Water Purifier Co., Lansing, Mich.
Pittsburg Filter & Water Heater Co., Pittsburg, Pa.
Stewart Heater Co., Buffalo, N. Y. *See adv. page 9.*
Stilwell-Bierce & Smith-Vaile Co., Dayton, O.
Webster, Warren, & Co., Camden, N. J.

66 **Oil.** For collecting the waste oil from engines, and removing all foreign matter.

Bailey, F. E., & Co., Reading, Pa.
Belden, A. G., & Co., 145 Maiden Lane, New York.
Bingham & Co., Camden, N. J.
Bonar, Jas., & Co., Inc., Pittsburg, Pa.
Burt Mfg. Co., Akron, O.
Collins Mfg. Co., Ltd., Conshohocken, Pa.
Engineering & Power Co., Jamestown, N. Y.
Gravity Purifier Co., Decatur, Ind.
Haines, Wm. S. Co., 136 S. 4th St., Philadelphia, Pa.
Nusbaum, F. A., Dayton, Ohio. *See adv. page 15.*
Pittsburgh Gage & Supply Co., Pittsburg, Pa.
Purity Oil Filter Mfg. Co., Pittsburg, Pa.
Robertson, Jas. L., & Sons, 204 Fulton St., New York.
Sexton & Co., 60 Broad St., Boston, Mass.
Sims Co., Erie, Pa.
Union Steam Specialty Co., Scranton, Pa.

67 **FLOATS, COPPER.** Hollow water-tight spheres of spun copper for indicating the height of a fluid, or for operating apparatus by the fluctuations of a fluid on which they rest.

Boekel, William, & Co., 519 Vine St., Philadelphia, Pa.
Boston Brass Co., 36 Oliver St., Boston, Mass.
Boston Steam Specialty Co., 170 Congress St., Boston, Mass.
Diamond Stamped Ware Co., Detroit, Mich.
Forest City Brass Works, Cleveland, O.
Hercules Float Works, Springfield, Mass.
McNab & Harlin Mfg. Co., 56 John St., New York.
Mott, J. L., Iron Works, 84 Beekman St., New York.
National Brass & Metal Co., Minneapolis, Minn.
Naugatuck Mfg. Co., Naugatuck, Conn.
Page, Wm. H. Boiler Co., Norwich, Conn.
Pittsburgh Gage & Supply Co., Pittsburg, Pa.
Reliance Gauge Column Co., Cleveland, O.
Rome Sanitary Works, Rome, N. Y.
Springfield Brass Co., Springfield, Mass.
Standard Steam Specialty Co., 111 5th Ave., New York.

68 **GAGES.** For registering pressure of steam or liquid, or for indicating the height of liquids in vessels, as the height of water in boilers.

69 **Draft.** For measuring the induced pressure resulting from the draft of a chimney, or a draft apparatus.

American Steam Gauge & Valve Mfg. Co., 220 Camden St., Boston, Mass.

GAGES, DRAFT, continued.

Ashton Valve Co., 271 Franklin St., Boston, Mass.
Bonner, Wm. F., & Co., 53 State St., Boston, Mass.
Crosby Steam Gage & Valve Co., 97 Oliver St., Boston, Mass.
Hohmann & Maurer Mfg. Co., Rochester, N. Y.
Schaeffer & Budenberg Mfg. Co., St. Edwards & Bedford Sts., Brooklyn, N. Y.
Star Brass Mfg. Co., 114 E. Dedham St., Boston, Mass.
Sturtevant, B. F., Co., Hyde Park, Mass.

70 **Mercury.** For measuring pressure by means of a mercury column.

American Steam Gauge & Valve Mfg. Co., 220 Camden St., Boston. Mass.
Belfield, H., & Co., 435 N. Broad St., Philadelphia, Pa.
Brown, Edward, 915 Samson St., Philadelphia, Pa.
Crane Co., 10 N. Jefferson St., Chicago, Ill.
Crosby Steam Gage & Valve Co., 97 Oliver St., Boston, Mass.
Hohmann & Maurer Mfg. Co., Rochester, N. Y.
Pittsburgh Gage & Supply Co., Pittsburg, Pa. *See adv. pages 10-11.*
Quimby Engineering Co., 913 Ridge Avenue, Philadelphia, Pa.
Schaeffer & Budenberg Mfg. Co., St. Edwards & Bedford Sts., Brooklyn, N. Y.
Standard Gauge Mfg. Co., Syracuse, N. Y.

71 **Pressure Recording.** Having a dial with index hand, provided with pen or pencil, which graphically records the pressure.

American Steam Gauge & Valve Mfg. Co., 220 Camden St., Boston, Mass.
Ashcroft Mfg. Co., 85 Liberty St., New York.
Ashton Valve Co., 271 Franklin St., Boston, Mass.
Belfield, H., & Co., 435 N. Broad St., Philadelphia, Pa.
Bristol Co., Waterbury, Conn.
Crosby Steam Gage & Valve Mfg. Co., 97 Oliver St., Boston.
Helios-Upton Co., Peabody, Mass.
Hohmann & Maurer Mfg. Co., Rochester, N. Y.
Quimby Engineering Co., 913 Ridge Ave., Philadelphia, Pa.
Schaeffer & Budenberg Mfg. Co., St. Edwards & Bedford Sts., Brooklyn, N. Y.
Schmidt, G. & L., 216 Centre St., New York.
Standard Gauge Mfg. Co., Syracuse, N. Y.
Star Brass Mfg. Co., 114 E. Dedham St., Boston, Mass.
Trautvetter Bros., Paterson, N. J.

72 **Steam.** For indicating pressure of steam in pounds per square inch, and the corresponding degrees of heat.

American Steam Gauge & Valve Mfg. Co., 220 Camden St., Boston, Mass.
Ashcroft Mfg. Co., 85 Liberty St., New York.
Ashton Valve Co., 271 Franklin St., Boston, Mass.
Belfield, H., & Co., 435 N. Broad St., Philadelphia, Pa.
Crane Co., 10 N. Jefferson St., Chicago, Ill.
Crosby Steam Gage & Valve Co., 97 Oliver St., Boston, Mass.
Hohmann & Maurer Mfg. Co., Rochester, N. Y.
Jarecki Mfg. Co., Erie, Pa.

GAGES, STEAM, continued.

Lunkenheimer Co., Cincinnati, O.
Marsh, James P., & Co., 224 Washington St., Chicago, Ill.
Pittsburgh Gage & Supply Co., Pittsburg, Pa.
Schaeffer & Budenberg Mfg. Co., St. Edwards & Bedford Sts., Brooklyn, N. Y.
Schmidt, G. & L., 216 Centre St., New York.
Standard Gauge Mfg. Co., Syracuse, N. Y.
Star Brass Mfg. Co., 114 E. Dedham St., Boston, Mass.
Utica Steam Gauge Co., Frankfort, N. Y.

73 **Vacuum.** For indicating absolute pressure below atmospheric pressure. Usually graduated in inches corresponding to the height of the mercury column supported by atmospheric pressure.

American Steam Gauge & Valve Mfg. Co., 220 Camden St., Boston, Mass.
Ashcroft Mfg. Co., 85 Liberty St., New York.
Ashton Valve Co., 271 Franklin St., Boston, Mass.
Belfield, H., & Co., 435 N. Broad St., Philadelphia, Pa.
Cleveland Steam Gauge Co., Cleveland, O.
Crane Co., 10 N. Jefferson St., Chicago, Ill.
Crosby Steam Gage & Valve Co., 97 Oliver St., Boston, Mass.
Hohmann & Maurer Mfg. Co., Rochester, N. Y.
Marsh, Jas. P., & Co., 224 Washington St., Chicago, Ill.
Phillips Co., 257 Atlantic Ave., Boston, Mass.
Pittsburgh Gage & Supply Co., Pittsburg, Pa.
Quimby Engineering Co., 913 Ridge Ave., Philadelphia, Pa.
Schaeffer & Budenberg Mfg. Co., St. Edwards & Bedford Sts., Brooklyn, N. Y.
Schmidt, G. & L., 216 Centre St., New York.
Standard Gauge Mfg. Co., Syracuse, N. Y.
Star Brass Mfg. Co., 114 E. Dedham St., Boston, Mass.
Utica Steam Gauge Co., Frankfort, N. Y.

74 **Water.** For indicating the height of water while under pressure in the boiler.

American Steam Gauge & Valve Mfg. Co., 220 Camden St., Boston, Mass.
Ashcroft Mfg. Co., 85 Liberty St., New York.
Ashton Valve Co., 271 Franklin St., Boston, Mass.
Belfield, H., & Co., 435 N. Broad St., Philadelphia, Pa.
Belknap Mfg. Co., Bridgeport, Conn.
Bonner, Wm. T., & Co., 53 State St., Boston, Mass.
Buckeye Iron & Brass Works, Dayton, O.
Cochrane, J. A., Cleveland, O.
Crane Co., 10 N. Jefferson St., Chicago, Ill.
Crosby Steam Gage & Valve Co., 97 Oliver St., Boston, Mass.
Eaton, Cole & Burnham Co., 253 Broadway, New York.
Fairbanks Co., Broome & Elm Sts., New York.
Haydenville Co., Haydenville, Mass.
Jarecki Mfg. Co., Erie, Pa.
Lang, J., Electric Co., 176 E. Indiana St., Chicago, Ill.
Marsh, Jas. P., & Co., 224 Washington St., Chicago, Ill.
McNab & Harlin Mfg. Co., 56 John St., New York.
McRae & Roberts Co., Detroit, Mich.
Michigan Lubricator Co., Detroit, Mich.
Ohio Brass Co., Mansfield, O.

GAGES, WATER, continued.

Penberthy Injector Co., Detroit, Mich.
Phillips Co., 257 Atlantic Ave., Boston, Mass.
Pittsburgh Gage & Supply Co., Pittsburg, Pa.
Powell, Wm., Co., Cincinnati, O.
Queen City Brass & Iron Works, Cincinnati, O.
Reliable Water Gauge Co., 1616 Pine St., St. Louis, Mo.
Reliance Gauge Column Co., Cleveland, Ohio. *See adv. page 15.*
Schaeffer & Budenberg Mfg. Co., St. Edwards & Bedford Sts., Brooklyn, N. Y.
Schmidt, G. & L., 216 Centre St., New York.
Standard Gauge Mfg. Co., Syracuse, N. Y.
Star Brass Mfg. Co., 114 E. Dedham St., Boston, Mass.
Trautvetter Bros., Paterson, N. J.
Utica Steam Gauge Co., Frankfort, N. Y.
Van Duzen, E. W. Co., Cincinnati, O.
Walworth Mfg. Co., 134 Federal St., Boston, Mass.
Williams Gauge Co., Pittsburg, Pa.
Wright Mfg. Co., Detroit, Mich.

75 **GASKETS.** Rings for interposing between flanges or similar parts to prevent leakage.

American District Steam Co., Lockport, N. Y.
American Vulcanized Fibre Co., Wilmington, Del.
Boston Belting Co., 256 Devonshire St., Boston, Mass.
Brandt, Randolph, 38 Cortlandt St., New York.
Canfield, H. O., Bridgeport, Conn.
Chesterton, A. W., & Co., 64 India St., Boston, Mass.
Combination Rubber & Belting Co., Bloomfield, N. J.
Common Sense Metallic Packing Mfg. Co., 393 Pearl St., N. Y.
Crane Co., 10 N. Jefferson St., Chicago, Ill.
Crescent Belting & Packing Co., Trenton, N. J.
Delaware Hard Fibre Co., Wilmington, Del.
Diamond Rubber Co., Akron, O.
Eagle Oil & Supply Co., 104 Broad St., Boston, Mass.
France Packing Co., Inc., Tacony, Philadelphia, Pa. *See adv. page 6.*
Garlock Packing Co., Palmyra, N. Y.
Goodrich, B. F., Co., Akron, O.
Goodyear Rubber Co., 787 Broadway, New York.
Guillott Metal Gasket Co., 84 Market St., Chicago, Ill.
Gutta Percha & Rubber Mfg. Co., 126 Duane St., New York.
Hamilton Rubber Mfg. Co., Trenton, N. J.
Home Rubber Co., Trenton, N. J.
Humphryes Mfg. Co., Mansfield, O.
Jenkins Bros., 71 John St., New York.
Johns, H. W.-Manville Co., 100 William St., New York.
Knowlton, Geo. W., Rubber Co., 29 Broad St., Boston, Mass.
La Favorite Rubber Mfg. Co., Hawthorne, N. J.
Lake Shore Rubber Co., Erie, Pa.
Libby Mfg. Co., 73 Water St., New York.
Magee, Alonzo H., 106-108 Beekman St., New York.
Manhattan Rubber Mfg. Co., 18 Vesey St., New York.
Mechanical Rubber Co., Cleveland, O.
Merwath Metallic Casket Co., 32 Broadway, New York.
Mineralized Rubber Co., Inc., 18 Cliff St., New York.

GASKETS, continued

Morgan & Wright, 331 West Lake St., Chicago, Ill.
National India Rubber Co., Bristol, R. I.
New Jersey Asbestos Co., Camden, N. J.
New York Belting & Packing Co., 25 Park Place, New York.
New York Rubber Co., 84 Reade St., New York.
Pennsylvania Rubber Co., Jeannette, Pa.
Peerless Rubber Mfg. Co., 16 Warren St., New York. *See adv. page 8.*
Pilley Packing & Flue Brush Mfg. Co., St. Louis, Mo.
Quaker City Rubber Co., 409 Market St., Philadelphia, Pa.
Republic Rubber Co., Youngstown, O.
Revere Rubber Co., 77 Bedford St., Boston, Mass.
Smith, James, & Co., Inc., 411 Race St., Philadelphia, Pa.
Stokes, Joseph, Rubber Co., Trenton, N. J.
Strong Machinery & Supply Co., 2½ Murray St., New York.
Taunton Rubber Mfg. Co., Taunton, Mass.
Trenton Rubber Mfg. Co., Trenton, N. J.
United States Mineral Wool Co., 143 Liberty St., New York.
United & Globe Rubber Mfg. Co., Trenton, N. J.
Vulcan Asbestos Co., 116 Maiden Lane, New York.
Watt's, John M., Sons, 123 S. 2d St., Philadelphia, Pa.
Whitehead Bros. Rubber Co., Trenton, N. J.

76 GLASSES, GAGE. The indicating glasses in gages.

Belfield, H., & Co., 435 N. Broad St., Philadelphia, Pa.
Crane Co., 10 N. Jefferson St., Chicago, Ill.
Crosby Steam Gage & Valve Co., 97 Oliver St., Boston, Mass.
Keating, Edward F., 446 Water St., New York.
McNab & Harlin Mfg. Co., 56 John St., New York.

77 GOVERNORS, PUMP. For controlling the working of steam or power pumps. Usually operated by the height of the water column.

Acton, John, 118 John St., Brooklyn, N. Y.
Albany Steam Trap Co., Albany, N. Y.
Belfield, H., & Co., 435 N. Broad St., Philadelphia, Pa.
Boston Steam Specialty Co., 170 Congress St., Boston, Mass.
Burrows Mfg. Co., Williamsport, Pa.
Creamer Steam Specialties Co., 123 Liberty St., New York.
Davis, G. M., Regulator Co., 144 Milwaukee Ave., Chicago, Ill.
Dean Bros. Steam Pump Works, 10th St. & Senate Ave., Indianapolis, Ind.
D'Este, Julian Co., 24 Canal St., Boston, Mass.
Elektron Mfg. Co., Springfield, Mass.
Fisher Governor Co., Marshalltown, Ia.
Ford, Thomas P. Co., 81 Centre St., New York.
Foster Engineering Co., Newark, N. J.
Gardner Governor Co., Quincy, Ill.
Kieley & Mueller, 34 W. 13th St., New York.
Kitts Mfg. Co., Oswego, N. Y.
Locke Regulator Co., Salem, Mass.
Lombard Governor Co., 36 Whittier St., Boston, Mass.
Mason Regulator Co., 158 Summer St., Boston, Mass.
Robertson, Jas. L., & Sons, 204 Fulton St., New York.

GOVERNORS, PUMP, continued

Standard Steam Specialty Co., 111 5th Ave., New York.
Strong, Carlisle & Hammond Co., Cleveland, Ohio.
Valley Iron Works, Williamsport, Pa.
Waters Governor Co., 34 Oliver St., New York.
Watts Regulator Co., Lawrence, Mass.

78 Steam Engine. For controlling the speed of steam engines.

Bath Iron Works, Bath, Me.
Belfield, H., & Co., 435 N. Broad St., Philadelphia, Pa.
Eclipse Governor Co., Vicksburg, Mich.
Gardner Governor Co., Quincy, Ill.
Jarecki Mfg. Co., Erie, Pa.
Judson Governor Co., Rochester, N. Y.
Lane & Bodley Co., Cincinnati, O.
Lombard Governor Co., 36 Whittier St., Boston, Mass.
Manufacturers Governor Co., Hartford, Conn.
Nordberg Mfg. Co., Milwaukee, Wis.
Pickering Governor Co., Portland, Conn.
Sinker-Davis Co., Indianapolis, Ind.
Stearns Mfg. Co., Erie, Pa.
Waters Governor Co., 34 Oliver St., Boston, Mass.
Watertown Engine Co., Watertown, N. Y.

79 Water Wheel. For regulating the speed of water wheels.

American Water Motor Co., Columbus, O.
Lombard Governor Co., 36 Whittier St., Boston, Mass.
Replogle Governor Works, Chestnut St., Akron, O.
Sturgess Governor Engineering Co., Troy, N. Y.
Woodward Governor Co., Rockford, Ill.

80 GRATE BARS.

Ashcroft Mfg. Co., 85 Liberty St., New York.
Bath Iron Works, Bath, Me.
Bovaird & Seyfang Mfg. Co., 34 Davis St., Bradford, Pa.
Brightman Furnace Co., Cleveland, O.
Butman Boiler Furnace Co., Monadnock Blk., Chicago, Ill.
Casey & Hedges, Mfg. Co., Chattanooga, Tenn.
Co-operative Foundry, Detroit, Mich.
Dobbie Foundry & Machine Co., Niagara Falls, N. Y.
Foster, F. W., Mfg. Co., 99 Haverhill St., Boston, Mass.
Gill, J. H., Raleigh, N. C.
Gordon Hollow Blast Grate Co., Greenville, Mich.
Hetherington & Berner, Indianapolis, Ind.
Holyoke Steam Boiler Works, Holyoke, Mass.
Kelly Foundry & Machine Co., Goshen, Ind.
Kutztown Foundry & Machine Co., Kutztown, Pa.
Lahman, W. H., 59 E. Indiana St., Chicago, Ill.
Lane & Bodley Co., Cincinnati, O.
McClave, Brooks & Co., Scranton, Pa.
Mechanics' Iron Foundry Co., 38 Kemble St., Boston, Mass.
Mershon Patent Shaking Grate Works, 1203 Filbert St., Philadelphia, Pa.
Minneapolis Steel & Machinery Co., 2854 Minnehaha Ave., Minneapolis, Minn.
Murray Iron Works Co., Burlington, Ia.

GRATE BARS, continued

National Water Tube Boiler Co., New Brunswick, N. J.
Neemes Bros., Troy, N. Y.
New England Roller Grate Co., Springfield, Mass.
New York Grate Bar Co., Jersey City, N. J.
Pittsburg Valve, Foundry & Construction Co., Pittsburg, Pa.
Playford Stoker Co., Cleveland, O.
Reagan Grate Bar Co., 209 N. Front St., Philadelphia, Pa.
Robson, Chas. W., W. Washington Ave. & 8th St., Philda.
Robertson, Jas. L., & Son, 204 Fulton St., New York.
Rose Patent Grate Co., Council Bluffs, Ia.
Rutzler, E., 178 Centre St., New York.
Salamander Grate Bar Co., 126 Liberty St., New York.
Scranton Steam Pump Co., Scranton, Pa.
Sharpless & Watts, 1522 Chestnut St., Philadelphia, Pa.
Stowell Mfg. & Foundry Co., South Milwaukee, Wis.
Thompson, Richard, & Co., 126 Liberty St., New York.
Titusville Iron Co., Titusville, Pa.
Toledo Foundry & Machine Co., Toledo, O.
Tupper, W. W., & Co., 39 Cortlandt St., New York.
Union Steam Specialty Co., Scranton, Pa.
Vilter Mfg. Co., Milwaukee, Wis.
Wickes Bros., Saginaw, Mich.
Willoughby, A. B., The Bourse, Philadelphia, Pa. *See adv. page 5.*
Worthington National Grate Co., Baltimore, Md.

81. GRATES.

82. Oblong and Circular. See 84, Shaking Grates.

83 Rocking. See 84, Shaking Grates.

84 Shaking. That can be oscillated to clean the fires.

Dobbie Foundry & Machine Co., Niagara Falls, N. Y.
Foster, F. W., Mfg. Co., 99 Haverhill St., Boston, Mass.
Gordon Hollow Blast Grate Co., Greenville, Mich.
Hancock Inspirator Co., 89 Liberty St., New York.
Kelly Foundry & Machine Co., Goshen, Ind.
Lahman, W. H., 59 E. Indiana St., Chicago, Ill.
McClave Brooks Co., Scranton, Pa.
Martin Grate Co., 281 Dearborn St., Chicago, Ill.
Mershon Patent Shaking Grate Works, 1203 Filbert St., Philadelphia, Pa. *See adv. page 23.*
Murray Iron Works Co., Burlington, Iowa.
Neemes Bros., Troy, N. Y.
Robertson, Jas. L., & Sons, 204 Fulton St., New York.
Salamander Grate Bar Co., 126 Liberty St., New York.
Scranton Steam Pump Co., Scranton, Pa.
Springfield Boiler & Mfg. Co., Springfield, Ill.
St. John, G. C., 143 Liberty St., New York.
Thompson, Richard, & Co., 126 Liberty St., New York. *See adv. page 5.*
Titusville Iron Co., Titusville, Pa.
Treadwell, M. H., & Co., 95 Liberty St., New York.
Tupper, W. W., & Co., 39 Cortlandt St., New York.
Union Steam Specialty Co., Scranton, Pa.
Willoughby, A. B., The Bourse, Philadelphia, Pa. *See adv. page 5.*

85 **HEATERS, FEED WATER.** For transferring waste heat—generally from exhaust steam—to the feed water, to raise its temperature before entering the boiler.

Baragwanath, Wm., & Son, 54 W. Division St., Chicago, Ill.
Bates Machine Co., Joliet, Ill.
Bath Iron Works, Bath, Me.
Blake, Geo. F., Mfg. Co., 114 Liberty St., New York.
Bonar, Jas., & Co., Inc., Pittsburg, Pa.
Bridgeport Boiler Works, Bridgeport, Conn.
Brownell Co., Dayton, O.
Buffalo Feed Water Heater & Purifier Co., White Bldg., Buffalo, N. Y.
Bulkley, Henry W., 141 Broadway, New York.
Colles, E. G. T., & Co., 42 Clinton St., Chicago, Ill.
Cox, & Sons Co., Bridgeton, N. J.
Davis, I. B., & Son, Hartford, Conn.
Deane Steam Pump Co., Holyoke, Mass.
Erie Machine Shops, Erie, Pa.
Erie Mfg. & Supply Co., Erie, Pa.
Fisher & Davis, 1024 N. Main St., St. Louis, Mo.
Fulton Iron Works, San Francisco, Cal.
Gem City Boiler Co., Dayton, O.
Goubert Mfg. Co., 85 Liberty St., New York.
Griffing, A. A., Iron Co., 449 Communipaw Ave., Jersey City.
Harrisburg Pipe & Pipe Bending Co., Harrisburg, Pa.
Harrison Safety Boiler Works, 17th & Clearfield Sts., Philda.
Hawley Down Draft Furnace Co., 59 Townsend St., Chicago.
Hooker Steam Pump Co., St. Louis, Mo.
Hoppes Mfg. Co., Springfield, O.
Hussey, McCann & Co., 47 Dey St., New York.
Kaestner, Chas., & Co., 241 S. Jefferson St., Chicago, Ill.
Kelley, Benjamin F., & Son, 91 Liberty St., New York. *See adv. page 14.*
Kensington Engine Works, Ltd., 245 N. Broad St., Philda.
Keystone Engine & Machine Works, 5th & Buttonwood Sts., Philadelphia, Pa.
Knowles Steam Pump Works, 114 Liberty St., New York.
Kroschall Bros. Co., 59 E. Erie St., Chicago, Ill.
Laidlaw-Dunn-Gordon Co., 114 Liberty St., New York.
Lane & Bodley, Cincinnati, O.
Lawler Water-Feed & Damper Regulator Co., 181 Mercer St., New York.
Learmonth, Robert, 100 White Bldg., Buffalo, N. Y. *See adv. page 16.*
McGowan, John H., Co., Cincinnati, O.
Minneapolis Steel & Machinery Co., 2854 Minnehaha Ave., Minneapolis, Minn.
Mott, J. L., Iron Works, 88 Beekman St., New York.
Murray Iron Works Co., Burlington, Ia.
Nason Mfg. Co., 71 Fulton St., New York.
National Pipe Bending Co., New Haven, Conn.
Nordberg Mfg. Co., Milwaukee, Wis.
Oakes, William L., Decatur, Ill.
Patterson, Frank L., & Co., 26 Cortlandt St., New York.
Phoenix Iron Works Co., Meadville, Pa.
Pittsburg Feed Water Heater Co., Carnegie Bldg., Pittsburg.
Robertson, Jas. L., & Sons, 204 Fulton St., New York.
Scaife, W. B., & Sons Co., Pittsburg, Pa.

HEATERS, FEED WATER, continued

Scranton Steam Pump Co., Scranton, Pa.
Sims Co., Erie, Pa.
Snow Steam Pump Works, 114 Liberty St., New York.
Springfield Boiler & Mfg. Co., Springfield, Ill.
Standard Steam Specialty Co., 111 5th Ave., New York.
Stewart Heater Co., Buffalo, N. Y. *See adv. page 9.*
Stilwell-Bierce & Smith-Vaile Co., Dayton, O.
Taunton Locomotive Mfg. Co., Taunton, Mass.
Tudor Boiler Mfg. Co., Cincinnati, O.
Wangler, Joseph F., Boiler & Sheet Iron Works Co., St. Louis.
Webster, Warren, & Co., Camden, N. J.
Wetherill, Robert, & Co., Chester, Pa.
Wheeler Condenser & Engineering Co., 42 Broadway, N. Y.
Whitlock Coil Pipe Co., Hartford, Conn. *See adv. page 12.*
Wickes Bros., Saginaw, Mich.
Worthington, Henry R., 114 Liberty St., New York.

86 INDICATORS, SPEED. See 54, Counters, Revolution.

87 **Steam Engine.** For drawing on paper a diagram, whose ordinates shall accurately represent in height, the steam pressure on the piston, at each and every part of the stroke, and for showing the arrangement of the valves for admission, cut-off, release, and compression; the power developed, etc.

American Steam Gauge & Valve Mfg. Co., 220 Camden St., Boston, Mass.
Ashcroft Mfg. Co., 85 Liberty St., New York.
Ashton Valve Co., 271 Franklin St., Boston, Mass.
Belfield, H., & Co., 435 N. Broad St., Philadelphia, Pa.
Bushnell, John S., Co., 126 Liberty St., New York.
Crosby Steam Gage & Valve Co., Boston, Mass.
Lippincott, A. C., Scranton, Pa.
Phillips Co., 164 High St., Boston, Mass.
Robertson, Jas. L., & Sons, 204 Fulton St., New York.
Schaeffer & Budenberg Mfg. Co., St. Edwards & Bedford Sts., Brooklyn, N. Y.
Star Brass Mfg. Co., 114 E. Dedham St., Boston, Mass.
Thompson, Richard, & Co., 126 Liberty St., New York. *See adv. page 5.*
Trill, W. L., Corry, Pa.
Union Steam Specialty Co., Scranton, Pa.

88 INJECTORS, BOILER FEEDING. For lifting and heating water and forcing it into boilers.

American Injector Co., Detroit, Mich.
Barnum Bros. Co., Troy, N. Y.
Belfield, H., & Co., 435 N. Broad St., Philadelphia, Pa.
Bordo, L. J., Co., 12th and Thompson Sts., Philadelphia, Pa.
Cadman, A. W., Mfg. Co., Pittsburg, Pa.
Cochrane, J. A., Cleveland, O.
Crane Co., 10 N. Jefferson St., Chicago, Ill.
Desmond-Stephan Mfg. Co., Urbana, O.
Erie Mfg. & Supply Co., Erie, Pa.
Eynon-Evans Mfg. Co., 1519 Clearfield St., Philadelphia, Pa.
Fairbanks, Morse & Co., 172 Franklin St., Chicago, Ill.
Forest City Brass Works, Cleveland, O.

INJECTORS, continued

Griffiths, James A., 500 N. 12th St., Philadelphia, Pa.
Hancock Inspirator Co., 89 Liberty St., New York.
Hayden & Derby Mfg. Co., 89 Liberty St., New York.
Lee Mfg. Co., Port Huron, Mich.
Lonergan, J. E., & Co., 211 Race St., Philadelphia, Pa.
Lunkenheimer Co., Cincinnati, Ohio. *See adv. page 22.*
Nathan Mfg. Co., 94 Liberty St., New York.
Ohio Injector Co., Wadsworth, O.
Penberthy Injector Co., Detroit, Mich.
Powell, Wm., Co., Cincinnati, O.
Randle Machinery Co., Cincinnati, O.
Rue Mfg. Co., 215 Race St., Philadelphia, Pa.
Schaeffer & Budenberg Mfg. Co., St. Edwards & Bedford Sts., Brooklyn, N. Y.
Schutte & Korting Co., 12th & Thompson Sts., Philadelphia.
Sellers, Wm., & Co., Inc., 1600 Hamilton St., Philadelphia, Pa.
Sherwood Mfg. Co., Buffalo, N. Y.
Sims Co., Erie, Pa.
Steam Appliance Co., 241 Greenfield Ave., Milwaukee, Wis.
Stephens, Roe, Mfg. Co., Detroit, Mich.
Tranter-Davison Mfg. Co., Pittsburg, Pa.
Walworth Mfg. Co., 134 Federal St., Boston, Mass.
Watson, N. A., Erie, Pa.

89 **INSPIRATORS.** See 88, Injectors, Boiler Feeding.

90 **LUBRICATORS AND OILING DEVICES.** For feeding oil, grease, graphite, or other lubricating material to the moving bearings of machinery.

91 **Automatic.** For automatically feeding lubricants into machinery bearings.

Acton, John, 118 John St., Brooklyn, N. Y.
Boston Steam Specialty Co., 170 Congress St., Boston, Mass.
Cochrane, J. A., Cleveland, O.
Crane Co., 10 N. Jefferson St., Chicago, Ill.
Greene, Tweed & Co., 17 Murray St., New York.
Haydenville Co., Haydenville, Mass.
Lonergan, J. E., & Co., 211 Race St., Philadelphia, Pa.
Lunkenheimer Co., Cincinnati, Ohio. *See adv. page 22.*
McNab & Harlin Mfg. Co., 56 John St., New York.
Manzel Bros., Buffalo, N. Y.
Nathan Mfg. Co., 92 Liberty St., New York.
Phenix Metallic Packing Co., 7 S. Jefferson St., Chicago, Ill.
Phillips Co., 164 High St., Boston, Mass.
Powell, Wm. Co., Cincinnati, O.
Star Brass Mfg. Co., 114 E. Dedham St., Boston, Mass.
Sterling Lubricator Co., Rochester, N. Y.
Swift Lubricator Co., Elmira, N. Y.

92 **Central Tank System.** For lubricating by means of pipes from an elevated reservoir, so that the oil flows by gravity to the bearings, being then caught by drip pans and returned to the reservoir by a pump.

Acton, John, 118 John St., Brooklyn, N. Y.
Bailey, F. E., & Co., Reading, Pa.
Boston Steam Specialty Co., 170 Congress St., Boston, Mass.

OILING DEVICES, continued

Lunkenheimer Co., Cincinnati, O.
Nathan Mfg. Co., 92 Liberty St., New York.
Phillips Co., 164 High St., Boston, Mass.
Sherwood Mfg. Co., 34 Washington St., Buffalo, N. Y.
Siegrist Lubricator Co., St. Louis, Mo.

93 **Force Feed, Mechanical.** For forcing or feeding lubricants to machinery bearings.

Bingham & Co., Camden, N. J.
Boston Steam Specialty Co., 170 Congress St., Boston, Mass.
Farnan Brass Works, Cleveland, O.
Force Feed Lubricating Co., Milwaukee, Wis.
Lonergan, J. E., & Co., 211 Race St., Philadelphia, Pa.
Lunkenheimer Co., Cincinnati, Ohio. *See adv. page 22.*
Michigan Lubricator Co., Detroit, Mich.
Nathan Mfg. Co., 92 Liberty St., New York.
Phillips Co., 164 High St., Boston, Mass.
Powell, Wm., Co., Cincinnati, O.
Star Brass Mfg. Co., 114 E. Dedham St., Boston, Mass.

94 **Grease Cups.** For feeding grease to bearings.

American Injector Co., Detroit, Mich.
Barnum Bros. Co., Troy, N. Y.
Belfield, H., & Co., 435 N. Broad St., Philadelphia, Pa.
Besly, Chas. H., & Co., 15-21 Clinton St., Chicago, Ill.
Bowen Mfg. Co., Auburn, N. Y.
Crane Co., 10 N. Jefferson St., Chicago, Ill.
Delaney Oil & Lubricant Co., Milwaukee, Wis.
Eaton, Cole & Burnham Co., 253 Broadway, New York.
Forest City Brass Works, Cleveland, O.
Haydenville Co., Haydenville, Mass.
Holland, Wm., 56 S. Canal St., Chicago, Ill.
Lonergan, J. E., & Co., 211 Race St., Philadelphia, Pa.
Lunkenheimer Co., Cincinnati, O.
McNab & Harlin Mfg. Co., 56 John St., New York.
Michigan Lubricator Co., Detroit, Mich.
Nathan Mfg. Co., 92 Liberty St., New York.
Ohio Brass Co., Mansfield, O.
Penberthy Injector Co., Detroit, Mich.
Phillips Co., 257 Atlantic Ave., Boston, Mass.
Powell, Wm., Co., Cincinnati, O.
Schaeffer & Budenberg Mfg. Co., St. Edwards & Bedford Sts., Brooklyn, N. Y.
Sherwood Mfg. Co., Buffalo, N. Y.
Star Brass Mfg. Co., 114 E. Dedham St., Boston, Mass.
Walworth Mfg. Co., 134 Federal St., Boston, Mass.

95 AUTOMATIC. Fitted with a spring and plunger.

American Injector Co., Detroit, Mich.
Crane Co., 10 N. Jefferson St., Chicago, Ill.
France Packing Co., Tacony, Philadelphia, Pa.
Forest City Brass Works, Cleveland, O.
Lonergan, J. E., & Co., 211 Race St., Philadelphia, Pa.
Lunkenheimer Co., Cincinnati, O.
Nathan Mfg. Co., 92 Liberty St., New York.
Phillips Co., 257 Atlantic Ave., Boston, Mass.

OILING DEVICES, continued

Schaeffer & Budenberg Mfg. Co., St. Edwards & Bedford Sts., Brooklyn, N. Y.
Walworth Mfg. Co., 134 Federal St., Boston, Mass.

96 **Oil Cups.** For feeding oil to bearings.

American Injector Co., Detroit, Mich.
Bangs Oil Cup Co., 118 Fowler St., Milwaukee, Wis.
Barnes & Erb Co., 3846 Lancaster Ave., Philadelphia, Pa.
Barnum Bros. Co., Troy, N. Y.
Belfield, H., & Co., 435 N. Broad St., Philadelphia, Pa.
Besly, Chas. H., & Co., 15-21 Clinton St., Chicago, Ill.
Bowen Mfg. Co., Auburn, N. Y.
Buckeye Iron & Brass Works, Dayton, O.
Cochrane, J. A., Cleveland, O.
Crane Co., 10 N. Jefferson St., Chicago, Ill.
Crosby Steam Gage & Valve Co., 97 Oliver St., Boston, Mass.
Detroit Lubricator Co., Detroit, Mich.
Eaton, Cole & Burnham Co., 253 Broadway, New York.
Eynon-Evans Mfg. Co., 1519 Clearfield St., Philadelphia, Pa.
Forest City Brass Works, Cleveland, O.
Gem Mfg. Co., Pittsburg, Pa.
Hancock Inspirator Co., 89 Liberty St., New York.
Haydenville Co., Haydenville, Mass.
Kelly & Jones Co., Greensburg, Pa.
Keystone Brass Co., Erie, Pa.
Lonergan, J. E., & Co., 211 Race St., Philadelphia, Pa.
Lunkenheimer Co., Cincinnati, O.
McNab & Harlin Mfg. Co., 56 John St., New York.
Manzel Bros., Buffalo, N. Y.
Michigan Lubricator Co., Detroit, Mich.
Nathan Mfg. Co., 92 Liberty St., New York.
National Brass & Metal Co., Minneapolis, Minn.
Ohio Brass Co., Mansfield, O.
Penberthy Injector Co., Detroit, Mich.
Phillips Co., 257 Atlantic Ave., Boston, Mass.
Powell, Wm., Co., Cincinnati, O.
Reed Mfg. Co., Erie, Pa.
Schaeffer & Budenberg Mfg. Co., St. Edwards & Bedford Sts., Brooklyn, N. Y.
Seibert Cylinder Oil Cup Co., 53 Oliver St., Boston, Mass.
Sherwood Mfg. Co., Buffalo, N. Y.
Springfield Brass Co., Springfield, O.
Stahl-Salter Lubricating Co., Minneapolis, Minn.
Star Brass Mfg. Co., Boston, Mass.
Swain Lubricator Co., 250 Lake St., Chicago, Ill.
Thomas Brass & Iron Co., Waukegan, Ill.
Wadhams Oil & Grease Co., Milwaukee, Wis.
Walworth Mfg. Co., 134 Federal St., Boston, Mass.
Weimer Machine Works Co., Lebanon, Pa.
Wilkinson, W. H., & Co., West Medway, Mass.

97 SIGHT FEED. Provided with a regulating device so that the oil feed may be observed.

Belfield, H., & Co., 435 N. Broad St., Philadelphia, Pa.
Buckeye Iron & Brass Works, Dayton, O.
Cochrane, J. A., Cleveland, O.

OILING DEVICES, continued.

Couse, Chas., & Co., 39 Dey St., New York.
Crane Co., 10 N. Jefferson St., Chicago, Ill.
Crosby Steam Gage & Valve Co., 97 Oliver St., Boston, Mass.
Detroit Lubricator Co., Detroit, Mich.
Jerecki Mfg. Co., Ltd., Erie, Pa.
Kelly & Jones Co., Greensburg, Pa.
Lonergan, J. E., & Co., 211 Race St., Philadelphia, Pa.
Lunkenheimer Co., Cincinnati, O.
McNab & Harlin Mfg. Co., 56 John St., New York.
McRae & Roberts, Detroit, Mich.
Michigan Lubricator Co., Detroit, Mich.
Nathan Mfg. Co., 92 Liberty St., New York.
Phillips Co., 257 Atlantic Ave., Boston, Mass.
Pittsburg Steam Jacket Lubricator Co., Pittsburg, Pa.
Powell, Wm., Co., Cincinnati, O.
Seibert Cylinder Oil Cup Co., 53 Oliver St., Boston, Mass.
Sherwood Mfg. Co., Buffalo, N. Y.
Star Brass Mfg. Co., 114 E. Dedham St., Boston, Mass.
Thomas Brass & Iron Co., Waukegan, Ill.
Wilkinson, W. H., & Co., West Medway, Mass.

98 PACKING. For preventing leakage at the joints of various apparatus containing air, steam or other gases or fluids under pressure.

99 Gum, Fibrous, etc.

Advance Packing & Supply Co., 55 S. Canal St., Chicago, Ill.
Alden Rubber Co., Akron, O.
Allen, W. D., Mfg. Co., 151 Lake St., Chicago, Ill.
American Steam Packing Co., 60 Federal St., Boston, Mass.
American Vulcanized Fibre Co, Wilmington, Del.
Asbestos Mfg. Co., 426 Market St., Philadelphia, Pa.
Barnum Bros. Co., Troy, N. Y.
Boston Belting Co., 256 Devonshire St., Boston, Mass.
Brandt, Randolph, 38 Cortlandt St., New York.
Cancos Mfg. Co., 146 N. 2d St., Philadelphia, Pa.
Canfield Mfg. Co., 1112 to 1122 Noble St., Philadelphia, Pa.
Chaplin-Fulton Mfg. Co., Pittsburg, Pa.
Chesterton, A. W., & Co., 64 India St., Boston, Mass.
Chicago Fireproof Covering Co., 18 N. Canal St., Chicago, Ill.
Clinton Mfg. Co., 83 Grand Ave., Brooklyn, N. Y.
Combination Rubber & Belting Co., Bloomfield, N. J.
Crandall Packing Co., Palmyra, N. Y.
Crane Co., 10 N. Jefferson St., Chicago, Ill.
Detroit Leather Specialty Co., Beecher & Michigan Aves., Detroit, Mich.
Delaware Hard Fibre Co., Wilmington, Del.
Diamond Rubber Co., Akron, O.
Eagle Oil & Supply Co., 104 Broad St., Boston, Mass.
Empire Rubber Mfg. Co., Trenton, N. J.
France Packing Co., Inc., Tacony, Philadelphia, Pa. *See adv. page 6.*
Garlock Packing Co., Palmyra, N. Y.
Gilmore, Robert M., Mfg. Co., 105 John St., New York.
Glanding, Jas., Co., 1907 N. 6th St., Philadelphia, Pa.
Globe Supply Co., Cincinnati, O.
Goodrich, B. F., Co., Akron, O.

PACKING, GUM, ETC., continued

Goodsell Packing Co., 33 S. Canal St., Chicago, Ill.
Goodyear Rubber Co., 787 Broadway, New York.
Gould Packing Co., East Cambridge, Mass.
Greene, Tweed & Co., 17 Murray St., New York.
Gutta Percha & Rubber Mfg. Co., 126 Duane St., New York.
Hamilton Rubber Mfg. Co., Trenton, N. J.
Home Rubber Co., Trenton, N. J.
Ireson, C. L., 148 High St., Boston, Mass.
Jacobs, Chas. M., Cordage Co., Cincinnati, O.
Jenkins Bros., 71 John St., New York.
Johns, H. W.-Manville Co., 100 William St., New York.
Johnson, Henry, & Co., Gates Ave. Blvd., Jersey City, N. J.
Knowlton, Geo. W., Rubber Co., 29 Broad St., Boston, Mass.
La Favorite Rubber Co., Hawthorne, N. J.
Lake Shore Rubber Co., Erie, Pa.
Lawrence Cordage Works, 46 South St., New York.
Leschen, A., & Sons Rope Co., St. Louis, Mo.
Libby Mfg. Co., 147-149 Varick St., New York.
Lubron Mfg. Co., 38 India St., Boston, Mass.
Lunkenheimer Co., Cincinnati, O.
McConnell Asbestos Co., Ltd., 265 Water St., Pittsburg, Pa.
Manhattan Rubber Mfg. Co., 18 Vesey St., New York.
Mechanical Rubber Co., Cleveland, O.
Mercer Rubber Co., Trenton, N. J.
Merwath Metallic Gasket Co., 32 Broadway, New York.
Metropolis Rubber Co., 116 Bleecker St., New York.
Mineralized Rubber Co., 18 Cliff St., New York.
Montgomery Bros., 48 N. Front St., Philadelphia, Pa.
Morgan & Wright, 331 W. Lake St., Chicago, Ill.
National India Rubber Co., Bristol, R. I.
New Jersey Asbestos Co., Camden, N. J.
New York Belting & Packing Co., 25 Park Place, New York.
New York Rubber Co., 84 Reade St., New York.
Peerless Rubber Mfg. Co., 16 Warren St., New York. *See adv. page 8.*
Pennsylvania Rubber Co., Jeannette, Pa.
Pilley Packing & Flue Brush Mfg. Co., St. Louis, Mo.
Quaker City Rubber Co., 409 Market St., Philadelphia, Pa.
Republic Rubber Co., Youngstown, O.
Revere Rubber Co., 77 Bedford St., Boston, Mass.
Restein, Clement, & Co., 139 N. 2d St., Philadelphia, Pa.
Robertson, Jas. L., & Sons, 204 Fulton St., New York.
Smith, James, & Co., Inc., 411 Race St., Philadelphia, Pa.
Stokes, Joseph, Rubber Co., Trenton, N. J.
Strong Machinery & Supply Co., 2½ Murray St., New York.
Trenton Rubber Mfg. Co., Trenton, N. J.
United & Globe Rubber Mfg. Co., Trenton, N. J.
Voorhees Rubber Mfg. Co., Jersey City, N. J.
Vulcan Asbestos Co., 116 Maiden Lane, New York.
Watt's, John M., Sons, 123 2d St., Philadelphia, Pa.
Whitehead Bros. Rubber Co., Trenton, N. J.

100 **Metallic.**

American Steam Packing Co., 60 Federal St., Boston, Mass.
Chaplin-Fulton Mfg. Co., Pittsburg, Pa.
Common Sense Metallic Packing Mfg. Co., 393 Pearl St., N. Y.
Cook, C. Lee, Louisville, Ky.

PACKING, METALLIC, continued.

Crane Co., 10 N. Jefferson St., Chicago, Ill.
Crescent Mfg. Co., 96 Crescent Pl., Yonkers, N. Y.
France Packing Co., Inc., Tacony, Philadelphia, Pa. *See adv. page 6.*
Goodsell Packing Co., 32 S. Canal St., Chicago, Ill.
Harper & Slack Co., Chester, Pa.
Hileman-James Co., McKeesport, Pa.
Holmes Metallic Packing Co., Wilkesbarre, Pa.
Hoyt Metal Co., St. Louis, Mo.
Jerome & Elliott, 37 S. Canal St., Chicago, Ill.
Katzenstein, L., & Co., 357 West St., New York.
Libby Mfg. Co., 147-149 Varick St., New York.
Pioneer Brass Works, Indianapolis, Ind.
Regal Packing Co., 1402 Monadnock Blk., Chicago, Ill.
Robertson, Jas. L., & Sons, 204 Fulton St., New York.
Swain Lubricator Co., 250 Lake St., Chicago, Ill.
United States Metallic Packing Co., 427 N. 13th St., Phila.
Watt's, John M., Sons, 123 2d St., Philadelphia, Pa.

101 PIPE.

102 Bent. Pipe bent to any desired radius of curvature.

Belfield, H., & Co., 435 N. Broad St., Philadelphia, Pa.
Best Mfg. Co., Pittsburg, Pa.
Crane Co., 10 N. Jefferson St., Chicago, Ill.
Harrisburg Pipe & Pipe Bending Co., Harrisburg, Pa.
National Pipe Bending Co., New Haven, Conn.
National Tube Co., 26 Cortlandt St., New York.
Simmons Pipe Bending Works, Newark, N. J.
Whitlock Coil Pipe Co., Hartford, Conn. *See adv. page 12.*

103 Cast Iron.

Belfield, H., & Co., 435 N. Broad St., Philadelphia, Pa.
Builders Iron Foundry, Providence, R. I.
Byers, John F., Machine Co., Ravenna, O.
Clow, J. B., & Sons, Cor. Harrison & Franklin Sts., Chicago.
Dimmick Pipe Co., Birmingham, Ala.
Donaldson Iron Co., Emaus, Pa.
Drummond, M. J., & Co., 192 Broadway, New York.
Fox, John, & Co., 253 Broadway, New York.
Massilion Iron & Steel Co., Massillon, O.
Nelson, Charles, 439 E. 10th St., New York.
Reading Foundry Co., Reading, Pa.
United States Cast Iron Pipe & Foundry Co., 217 La Salle St., Chicago, Ill.
Utica Pipe Foundry Co., Utica, N. Y.
Warren Foundry & Machine Co., 160 Broadway, New York.
Wood, R. D., & Co., 400 Chestnut St., Philadelphia, Pa.

104 Riveted Steel. Steel pipe, riveted together instead of being welded.

Abendroth & Root Mfg. Co., 99 John St., New York.
Armitage-Herschell Co., North Tonawanda, N. Y.
Bigelow Co., New Haven, Conn.
Birch, F. F., Dover, N. J.
Carroll-Porter Boiler & Tank Co., Reading, Pa.

PIPE, RIVETED STEEL, continued.

East Jersey Pipe Co., 71 Broadway, New York.
Gillespie, T. A., Co., Pittsburg, Pa.
Keeler, E., Co., Williamsport, Pa.
McNeil, James, & Bro., Co., 29th & Railroad Sts., Pittsburg, Pa.
Means & Fulton Iron Works, Birmingham, Ala.
Pelton Water Wheel Co., 125 Main St., San Francisco, Cal.
Pollock, Wm. B., & Co., Youngstown, O.
Riter-Conley Mfg. Co., Pittsburg, Pa.
Springfield Boiler & Mfg. Co., Springfield, Ill.
Sterling Blower & Pipe Mfg. Co., Hartford, Conn.
Warren City Boiler Works, Warren, O.

105 **Spiral Riveted.** Pipe riveted spirally instead of straight.

Abendroth & Root Mfg. Co., 99 John St., New York.
American Spiral Pipe Works, 1173 S. Paulina St., Chicago, Ill.

106 **Wooden.**

American District Steam Co., Lockport, N. Y.
Excelsior Wooden Pipe Co., San Francisco, Cal.
National Wooden Pipe Co., Los Angeles, Cal.
Wyckoff, A., & Son, Elmira, N. Y.

107 **Wrought Iron.**

Alabama Tube & Iron Co., Birmingham, Ala.
American District Steam Co., Lockport, N. Y.
Belfield, H., & Co., 435 N. Broad St., Philadelphia, Pa.
Birch, F. F., Dover, N. J.
Byers, A. M., & Son, Pittsburg, Pa.
Cohoes Rolling Mill Co., Cohoes, N. Y.
Crane Co., 10 N. Jefferson St., Chicago, Ill.
Harrisburg Pipe & Pipe Bending Co., Harrisburg, Pa.
McNab & Harlin Mfg. Co., 56 John St., New York.
National Tube Co., Pittsburg, Pa.
Shelby Tube Co., Cleveland, O.
Spang, Chalfant & Co., Pittsburg, Pa.
Standard Welding Co., Cleveland, O.
Walworth Mfg. Co., 134 Federal St., Boston, Mass.
Youngstown Iron Sheet & Tube Co., Youngstown, O.

108 **PIPE BENDING MACHINES.** See Finding List.

109 **PIPE CUTTING AND THREADING MACHINES.** See Finding List.

110 **PIPE FITTINGS.** Connections for pipes, as couplings, crosses, etc.

111 **Brass.**

Bath Iron Works, Bath, Me.
Belfield, H., & Co., 435 N. Broad St., Philadelphia, Pa.
Belknap Mfg. Co., Bridgeport, Conn.
Best Mfg. Co., Pittsburg, Pa.
Boston Brass Co., 36 Oliver St., Boston, Mass.
Boston Steam Specialty Co., 170 Congress St., Boston, Mass. *See adv. page 14.*
Buckeye Iron & Brass Works, Dayton, O.
Central Brass Works, Cincinnati, O.

PIPE FITTINGS, BRASS, continued

Crane Co., 10 N. Jefferson St., Chicago, Ill.
Detroit Lubricator Co., Detroit, Mich.
Eaton, Cole & Burnham Co., 253 Broadway, New York.
Farnam Brass Works, Cleveland, O.
Fewlass, Leen Brass & Iron Co., Cincinnati, O.
Forest City Brass Works, Cleveland, O.
Grundy Brass Works, 90 Sudbury St., Boston, Mass.
Hamlin & Emery Brass Co., 26 Island St., Boston, Mass.
Haydenville Co., Haydenville, Mass.
Hoffman & Billings Mfg. Co., Milwaukee, Wis.
Jarecki Mfg. Co., Ltd., Erie, Pa.
Kelly & Jones Co., Greensburg, Pa.
Kinsey & Mahler Co., Peoria, Ill.
Lunkenheimer Co., Cincinnati, O.
McCambridge & Co., Ltd., 523 Cherry St., Philadelphia, Pa.
McDonald, A. Y., & Morrison Mfg. Co., Dubuque, Ia.
McNab & Harlin Mfg. Co., 56 John St., New York.
Milwaukee Brass Mfg. Co., Milwaukee, Wis.
Mott, J. L., Iron Works, 84 Beekman St., New York.
Mueller, H., Mfg. Co., Decatur, Ill.
Oil Well Supply Co., Pittsburg, Pa.
Pioneer Brass Works, Indianapolis, Ind.
Pleuger & Henger Mfg. Co., St. Louis, Mo.
Powell, Wm., Co., Cincinnati, O.
Queen City Brass & Iron Works, Cincinnati, O.
Rundle-Spence Mfg. Co., Milwaukee, Wis.
Thomas Brass & Iron Co., Waukegan, Ill.
Walworth Mfg. Co., 134 Federal St., Boston, Mass.
Western Tube Co., Kewanee, Ill.

112 **Cast Iron.**

American District Steam Co., Lockport, N. Y.
Arthur Co., 188 Front St., New York.
Belfield, H., & Co., 435 N. Broad St., Philadelphia, Pa.
Best Mfg. Co., Pittsburg, Pa.
Blake & Andros, 28 Portland St., Boston, Mass.
Crane & Co., 10 N. Jefferson St., Chicago, Ill.
Dart, E. M., Mfg. Co., Providence, R. I.
Drummond, M. J., & Co., 192 Broadway, New York.
Eaton, Cole & Burnham Co., 253 Broadway, New York.
Flagg, Stanley G., & Co., 424 N. 19th St., Philadelphia, Pa.
Fostoria Novelty Co., Fostoria, O.
Hoffmann, B., Mfg. Co., Milwaukee, Wis.
Illinois Malleable Iron Co., 32 W. Monroe St., Chicago, Ill.
Iron Sanitary Mfg. Co., 52 Dearborn St., Chicago, Ill.
Jarecki Mfg. Co., Erie, Pa.
Kelly & Jones Co., Greensburg, Pa.
Kuhns Bros., Dayton, O.
McLeod Co., 95 Liberty St., New York.
McNab & Harlin Mfg. Co., 56 John St., New York.
Michigan Heater Co., Big Rapids, Mich.
New Bedford Boiler & Machine Co., New Bedford, Mass.
Oil Well Supply Co., Pittsburg, Pa.
Pancoast, Henry B., & Co., 243 S. Third St., Philadelphia, Pa.
Perkins, B. F., & Son, Holyoke, Mass. *See adv. page 24.*
Pittsburg Valve Foundry & Construction Co., Pittsburg, Pa
Quaker Mfg. Co., Chicago, Heights, Ill.

PIPE FITTINGS, CAST IRON, continued

Rundle-Spence Mfg. Co., Milwaukee, Wis.
Sterling Blower & Pipe Mfg. Co., Hartford, Conn.
Thomson & Boyle Co., Los Angeles, Cal.
Walworth Mfg. Co., 134 Federal St., Boston, Mass.
Western Tube Co., Kewanee, Ill.

113 **Malleable Iron.**

Belfield, H., & Co., 435 N. Broad St., Philadelphia, Pa.
Crane Co., 10 N. Jefferson St., Chicago, Ill.
Devlin, Thos., Mfg. Co., 3d St., cor. Lehigh Ave., Philadelphia.
Flagg, Stanley G., & Co., 424 N. 19th St., Philadelphia, Pa.
Fostoria Novelty Co., Fostoria, O.
Illinois Malleable Iron Co., 32 W. Monroe St., Chicago, Ill.
Jarecki Mfg. Co., Erie, Pa.
Jefferson Mfg. Co., Lexington, Mass.
Johnson, Isaac G., & Co., Spuyten Duyvil, N. Y.
McNab & Harlin Mfg. Co., 56 John St., New York.
Malleable Iron Fittings Co., Branford, Conn.
Oil Well Supply Co., Pittsburg, Pa.
Tight Joint Co., 306-310 East 47th St., New York.
Walworth Mfg. Co., 134 Federal St., Boston, Mass.
Western Tube Co., Kewanee, Ill.

114 **PIPE RAILING FITTINGS.** Especially designed for building railings of pipe.

Belfield, H., & Co., 435 N. Broad St., Philadelphia, Pa.
Boston Brass Co., 36 Oliver St., Boston, Mass.
Buckeye Iron & Brass Works, Dayton, O.
Crane Co., 10 N. Jefferson St., Chicago, Ill.
Devlin, Thos., Mfg. Co., 3d St. cor. Lehigh Av., Philadelphia.
Eaton, Cole & Burnham Co., 253 Broadway, New York.
Flagg, Stanley G., & Co., 424 N. 19th St., Philadelphia, Pa.
Illinois Malleable Iron Co., 32 W. Monroe St., Chicago, Ill.
Jarecki Mfg. Co., Erie, Pa.
Kelly & Jones Co., Greensburg, Pa.
McNab & Harlin Mfg. Co., 56 John St., New York.
Pancoast, Henry B., & Co., 243 S. Third St., Philadelphia, Pa.
Sherwood Mfg. Co., Buffalo, N. Y.
Walworth Mfg. Co., 134 Federal St., Boston, Mass.
Western Tube Co., Kewanee, Ill.

115 **PIPE TAPPING MACHINES.** See Finding List.

116 **PLANIMETERS.** For measuring area of indicator cards.

American Steam Gauge & Valve Mfg. Co., 220 Camden St., Boston, Mass.
Ashcroft Mfg. Co., 85 Liberty St., New York.
Ashton Valve Co., 271 Franklin St., Boston, Mass.
Bushnell, John S., Co., 126 Liberty St., New York.
Crosby Steam Gage & Valve Co., 97 Oliver St., Boston, Mass.
Keuffel & Esser Co., 127 Fulton St., New York.
Robertson, Jas. L., & Sons, 204 Fulton St., New York.
Schaeffer & Budenberg Mfg. Co., St. Edwards & Bedford Sts., Brooklyn, N. Y.
Thompson, Richard, & Co., 126 Liberty St., New York.
Union Steam Specialty Co., Scranton, Pa.

PURIFIERS, FEED WATER. For purifying feed water of steam boilers.

Buffalo Feed Water Heater & Purifier Co., White Bldg., Buffalo, N. Y.
Colles, E. G. T., & Co., 42 Clinton St., Chicago, Ill.
Curtis-Hall Mfg. Co., Hartford, Conn.
Harrison Safety Boiler Works, 17th & Clearfield Sts., Philda.
Hoppes Mfg. Co., Springfield, O.
Kaestner, Chas., & Co., 241 S. Jefferson St., Chicago, Ill.
Learmonth, Robert, 100 White Bldg., Buffalo, N. Y. *See adv. page 16.*
McGowan, John H., Co., Cincinnati, O.
Patterson, Frank L., & Co., 26 Cortlandt St., New York.
Scaife, Wm. B., & Sons Co., Pittsburg, Pa.
Scranton Steam Pump Co., Scranton, Pa.
Stewart Heater Co., Buffalo, N. Y. *See adv. page 9.*
Webster, Warren & Co., Camden, N. J.
Wheeler Condenser & Engineering Co., 42 Broadway, N. Y.
Wickes Bros., Saginaw, Mich.

REDUCING WHEELS. For reducing the motion of an engine head to convenient proportions for an indicator motion.

Ashcroft Mfg. Co., 85 Liberty St., New York.
Ashton Valve Co., 271 Franklin St., Boston, Mass.
Bushnell, John S., Co., 126 Liberty St., New York.
Crosby Steam Gage & Valve Co., 97 Oliver St., Boston, Mass.
Deane, H. C., Fitchburg, Mass.
Lippincott, A. C., Scranton, Pa.
Robertson, Jas. L., & Sons, 204 Fulton St., New York.
Schaeffer & Budenberg Mfg. Co., St. Edwards & Bedford Sts., Brooklyn, N. Y.
Trill, W. L., Corry, Pa.
Union Steam Specialty Co., Scranton, Pa.
Webster & Perks Tool Co., Springfield, O.

REGULATORS. For regulating high and low pressure steam boilers, engines, elevator pumps, etc.

Damper. For regulating the damper and consequently the draft of boiler furnaces.

Acton, John, 118 John St., Brooklyn, N. Y.
Belfield, H., & Co., 435 N. Broad St., Philadelphia, Pa.
Burrows Mfg. Co., York, Pa.
Collins Mfg. Co., Ltd., Conshohocken, Pa.
Crane Co., 10 N. Jefferson St., Chicago, Ill.
Davis, G. M., Regulator Co., 144 Milwaukee Ave., Chicago, Ill.
D'Este, Julian, Co., 24 Canal St., Boston, Mass.
Ford, Thos. P., Co., 81 Centre St., New York.
Kelly & Jones Co., Greensburg, Pa.
Kieley & Mueller, 34 W. 13th St., New York.
Kitts Mfg. Co., Oswego, N. Y.
Lawler Water-Feed & Damper Regulator Co., 181 Mercer St., New York.
Locke Regulator Co., Salem, Mass.
Lonergan, J. E., & Co., 211 Race St., Philadelphia, Pa.
McNab & Harlin Mfg. Co., 56 John St., New York.
Mason Regulator Co., 158 Summer St., Boston, Mass.

REGULATORS, DAMPER, continued.

Nason Mfg. Co., 71 Fulton St., New York.
Patterson, Frank L., & Co., 26 Cortlandt St., New York.
Patterson Regulator Co., Baltimore, Md.
Powers Regulator Co., 40 Dearborn St., Chicago, Ill.
Robertson, Jas. L., & Sons, 204 Fulton St., New York.
Rutzler, E., 178 Centre St., New York.
Scranton Steam Pump Co., Scranton, Pa.
Spencer Regulator Co., Salem, Mass.
Standard Steam Specialty Co., 111 5th Ave., New York.
Thompson, Richard, & Co., 126 Liberty St., New York.
Walworth Mfg. Co., 134 Federal St., Boston, Mass.
Watts Regulator Co., Lawrence, Mass.

121 **Feed Water.** For holding the water at any desired point in the boiler.

Acton, John, 118 John St., Brooklyn, N. Y.
Berry Engineering Co., Chester, Pa.
Blake, George F., Mfg. Co., 114 Liberty St., New York.
Boston Steam Specialty Co., 170 Congress St., Boston, Mass. *See adv. page 14.*
Burrows Mfg. Co., Williamsport, Pa.
Central Machine Co., 732 Sansom St., Philadelphia, Pa.
Chaplin-Fulton Mfg. Co., Pittsburg, Pa.
Clark Bros., Co., Vicksburg, Mich.
Crosby Steam Gage & Valve Co., 97 Oliver St., Boston, Mass.
Davis, G. M., Regulator Co., 144 Milwaukee Ave., Chicago, Ill.
Ford, Thos. P., Co., 81 Centre St., New York.
Kieley & Mueller, 34 W. 13th St., New York.
Lawler Water-Feed & Damper Regulator Co., 181 Mercer St., New York.
Learmonth, Robert, 100 White Bldg., Buffalo, N. Y. *See adv. page 16.*
McNab & Harlin Mfg. Co., 56 John St., New York.
Pittsburgh Gage & Supply Co., Pittsburg, Pa.
Standard Ice Machine & Mfg. Co., Hamilton, O.
Standard Steam Specialty Co., 111 5th Ave., New York.
Strong, Carlisle & Hammond Co., Cleveland, Ohio.
Williams Gauge Co., Pittsburg, Pa.

122 **Pressure.** For keeping a desired pressure in heating systems by delivering live steam to exhaust pipes when exhaust steam is insufficient to give the required temperature.

Acton, John, 118 John St., Brooklyn, N. Y.
American District Steam Co., Lockport, N. Y.
Belfield, H., & Co., 435 N. Broad St., Philadelphia, Pa.
Crane Co., 10 N. Jefferson St., Chicago, Ill.
Davis, G. M., Regulator Co., 144 Milwaukee Ave., Chicago, Ill.
D'Este, Julian, Co., 24 Canal St., Boston, Mass.
Erwin & Co., 35 N. Canal St., Chicago, Ill.
Fairbanks Co., Broome & Elm Sts., New York.
Fisher Governor Co., Marshalltown, Ia.
Ford, Thos. P., Co., 81 Centre St., New York.
Foster Engineering Co., Newark, N. J.
Gardner Governor Co., Quincy, Ill.
Haines, Wm. S., Co., 136 S. 4th St., Philadelphia, Pa.
Johnson Temperature Regulating Co., 240 4th Ave., New York.

REGULATORS, PRESSURE, continued.

Kieley & Mueller, 34 W. 13th St., New York.
Kitts Mfg. Co., Oswego, N. Y.
Klipfel & Thomas Co., 74 W. Lake St., Chicago, Ill.
Locke Regulator Co., Salem, Mass.
Lonergan, J. E., & Co., 211 Race St., Philadelphia, Pa.
McNab & Harlin Mfg. Co., 56 John St., New York.
Mason Regulator Co., 158 Summer St., Boston, Mass.
Monash-Younker Co., 203 S. Canal St., Chicago, Ill.
Quimby Engineering Co., 913 Ridge Ave., Philadelphia, Pa.
Perkes, Charles, 627 Arch St., Philadelphia, Pa.
Schaeffer & Budenberg Mfg. Co., St. Edwards & Bedford Sts., Brooklyn, N. Y.
Standard Steam Specialty Co., 111 5th Ave., New York.
Strong, Carlisle & Hammond Co., Cleveland, Ohio.
Thompson, Richard, & Co., 126 Liberty St., New York.
Union Steam Specialty Co., Scranton, Pa.
Waters Governor Co., 34 Oliver St., Boston, Mass.
Watson & McDaniel Co., 146 N. 7th St., Philadelphia, Pa.
See adv. page 12.
Watts Regulator Co., Lawrence, Mass.

123 **Temperature.** For controlling the temperature of steam boilers and hot water heaters.

Acton, John, 118 John St., Brooklyn, N. Y.
Boston Steam Specialty Co., 170 Congress St., Boston, Mass.
Davis & Roesch Temperature Controlling Co., 136 Liberty St., New York.
D'Este, Julian, Co., 24 Canal St., Boston, Mass.
Electric Heat Regulator Co., Minneapolis, Minn.
Howard Thermostat Co., Oswego, N. Y.
Kieley & Mueller, 34 W. 13th St., New York.
Lawler Water Feed & Damper Regulator Co., 181 Mercer St., New York.
Powers Regulator Co., 40 Dearborn St., Chicago, Ill.

124 **REHEATERS.** For improving the quality of the steam as it passes between the cylinders of multiple expansion engines.

Atlantic Works, 70 Border St., E. Boston, Mass.
Hussey, McCann, & Co., 47 Dey St., New York.
Patterson, Frank L., & Co., 26 Cortlandt St., New York.
Wheeler Condenser & Engineering Co., 42 Broadway, N. Y.
Whitlock Coil Pipe Co., Hartford, Conn.
Willoughby, A. B., The Bourse, Philadelphia, Pa.

125 **RESEATING MACHINES, VALVE.** For refacing pipe valve seats and discs.

Barnum, W. P., Fredonia, N. Y.
Draper Mfg. Co., Port Huron, Mich.
Hall, C. F., & Son, Syracuse, N. Y.
Leavitt Machine Co., Orange, Mass.
Quincy Valve & Mfg. Co., Quincy, Ill.

126 **SCRAPERS, FLUE OR TUBE.** See 49, Cleaners, Flue or Tube.

127 **SEAT FACING MACHINES, VALVE.** For facing the valve-seats of engine cylinders.

Cogswell, W. B., Syracuse, N. Y.

128 **SEPARATORS, STEAM.** For removing entrained water, oil or grease from steam apparatus. See also 61, Extractors, Grease.

Albany Steam Trap Co., Albany, N. Y.
American District Steam Co., Lockport, N. Y.
Austin Separator Co., Detroit, Mich.
Baum Separator & Machine Co., Manheim, Pa.
Best Mfg. Co., Pittsburg, Pa.
Coggswell, W. B., Syracuse, N. Y.
Colles, E. G. T., & Co., 42 Clinton St., Chicago, Ill.
Crane Co., 10 N. Jefferson St., Chicago, Ill.
De Rycke, Joseph, 41 Cortlandt St., New York.
D'Este, Julian, Co., 24 Canal St., Boston, Mass.
Detroit Separator Co., Detroit, Mich.
Direct Separator Co., Syracuse, N. Y.
Egdir Supply & Equipment Co., Carbondale, Pa.
Gardner Governor Co., Quincy, Ill.
Goubert Mfg. Co., 85 Liberty St., New York.
Griffing, A. A., Iron Co., 449 Communipaw Ave., Jersey City.
Harrison Safety Boiler Works, 17th & Clearfield Sts., Philda.
Hawley Down Draft Furnace Co., 59 Townsend St., Chicago.
Hoppes Mfg. Co., Springfield, O.
Ide, A. L., & Sons, Springfield, Ill.
Kaestner, Chas., & Co., 241 S. Jefferson St., Chicago, Ill.
Kensington Engine Works, 245 N. Broad St., Philadelphia, Pa.
Keystone Engine & Machine Works, 5th & Buttonwood Sts., Philadelphia, Pa.
Kieley & Mueller, 34 W. 13th St., New York.
Locke Regulator Co., Salem, Mass.
Monash-Younker Co., 203 S. Canal St., Chicago, Ill.
Mosher Water Tube Boiler Co., 1 Broadway, New York.
Patterson, Frank L., & Co., 26 Cortlandt St., New York.
Providence Steam Trap Co., Providence, R. I.
Robertson, James L., Sons, 204 Fulton Ave., New York.
Schaeffer & Budenberg Mfg. Co., St. Edwards & Bedford Sts., Brooklyn, N. Y.
Simonds, Frank A., Grand Rapids, Mich.
Standard Steam Specialty Co., 111 5th Ave., New York.
Steam Appliance Co., 241 Greenfield Ave., Milwaukee, Wis.
Thompson, Richard, & Co., 126 Liberty St., New York.
Union Steam Specialty Co., Scranton, Pa.
Watson & McDaniel Co., 146 N. 7th St., Philadelphia, Pa.
Webster, Warren, & Co., Camden, N. J.
Wheeler Condenser & Engineering Co., 42 Broadway, N. Y.
Whitlock Coil Pipe Co., Hartford, Conn. *See adv. page 13.*
Williams Gauge Co., Pittsburg, Pa.

129 **STOKERS, MECHANICAL.** For mechanically feeding fuel to furnaces.

Acme Stoker Co., 95 Liberty St., New York.
Aultman & Taylor Mchy Co., Mansfield, Ohio.
Babcock & Wilcox Co., 85 Liberty St., New York. *See adv. page 7.*
Brightman Furnace Co., Cleveland, O.

KERS, MECHANICAL, continued.

Casey & Hedges Mfg. Co., Chattanooga, Tenn.
Day-Kincaid Stoker Co., Cincinnati, O.
Duluth Stoker Co., Duluth, Minn.
International Stoker Co., Jersey City, N. J.
Kensington Engine Works, 245 N. Broad St., Philadelphia, Pa.
McClave-Brooks Co., Scranton, Pa.
Playford Stoker Co., Cleveland, O.
Pulverized Coal Stoker Co., 31 Burling Slip, New York.
Rosedale Foundry & Machine Co., Allegheny, Pa.
Ross & Co., 95 Liberty St., New York.
Under-Feed Stoker Co., Marquette Bldg., Chicago, Ill.
Westinghouse Machine Co., Pittsburg, Pa.
Wilkinson Mfg. Co., Bridgeport, Pa.

STOPS, ENGINE. Devices for automatically stopping stationary engines.

Consolidated Engine Stop Co., 100 Broadway, New York. *See adv. page 2.*
Ford, Thos. P., Co., 81 Centre St., New York.
Lane & Bodley Co., Cincinnati, O.
Locke Regulator Co., Salem, Mass.

STRADDLE FITTINGS. See 110, Pipe Fittings.

SUPERHEATERS. For superheating live steam.

Aultman & Taylor Mchy Co., Mansfield, Ohio.
Babcock & Wilcox Co., 85 Liberty St., New York. *See adv. page 7.*
Edgemoor Iron Co., Edgemoor, Del.
Hussey, McCann & Co., 37 Dey St., New York.
Potter Separator Co., 43 Cortlandt St., New York.
Power Specialty Co., Buffalo, N. Y.
Whitlock Coil Pipe Co., Hartford, Conn.
Willoughby, A. B., The Bourse, Philadelphia, Pa.

TANKS, STEAM BLOW-OFF. Made to withstand ordinary boiler pressure and used to receive the discharge of steam boilers when blown off.

Atlantic Works, 70 Border St., E. Boston, Mass.
Bath Iron Works, Bath, Me.
Bigelow Co., New Haven, Conn.
Collins Iron Works, Long Island City, N. Y.
Crowley, John, Jackson, Mich.
Cunningham, Christopher, Greenpoint Ave., Brooklyn, N. Y.
Delaney, P., & Co., Newburgh, N. Y.
Drake, William, Springfield, Ill.
Franklin Machine & Steam Boiler Works, 19 Franklin St., Brooklyn, N. Y.
Frick Co., Waynesboro, Pa.
Frost Mfg. Co., Galesburg, Ill.
Funk, M., Boiler Works Co., La Crosse, Wis.
Gem City Boiler Co., Dayton, O.
Griffing, A. A. Iron Co., 449 Communipaw Ave., Jersey City, N. J.
Hammond Iron Works, Warren, Pa.
Harrison Safety Boiler Works, 17th & Clearfield Sts., Philda.

TANKS, STEAM BLOW OFF, continued.

Holyoke Steam Boiler Works, Holyoke, Mass.
Kellogg Bros., Jacksonville, Ill.
Kensington Engine Works, 245 N. Broad St., Philadelphia, Pa.
Kewanee Boiler Co., Kewanee, Ill.
McAleenan Boiler Co., Peoria, Ill.
Michelmann Boiler Co., Quincy, Ill.
Minneapolis Steel & Machinery Co., 2854 Minnehaha Ave., Minneapolis, Minn.
Murray Iron Works Co., Burlington, Ia.
Nichols, D. M., Iron Works, 2 Gouverneur Slip, New York.
Novelty Steam Boiler Works, Greenpoint Ave. & Newtown Creek, Brooklyn, N. Y.
Oakes, William L., Decatur, Ill.
Oil City Boiler Works, Oil City, Pa.
Pennsylvania Boiler Works, Erie, Pa.
Pittsburgh Gage & Supply Co., Pittsburg, Pa.
Roberts Iron Works Co., Cambridgeport, Mass.
Springfield Boiler & Mfg. Co., Springfield, Ill.
Star Boiler Works, Clinton, Ia.
Struthers-Wells Co., Warren, Pa.
Union Boiler & Mfg. Co., Lebanon, Pa.
Vulcan Iron Works, San Francisco, Cal.
Walworth Mfg. Co., 134 Federal St., Boston, Mass.

134 **THERMOMETERS, RECORDING.** For recording temperature.

Bristol Co., Waterbury, Conn.
Schaeffer & Budenberg Mfg. Co., St. Edwards & Bedford Sts., Brooklyn, N. Y.
Watertown Thermometer Co., Watertown, N. Y.

135 **TOWERS, WATER COOLING.** For recooling ammonia and steam condenser water.

Alberger Condenser Co., 95 Liberty St., New York.
Birch, F. F., Dover, N. J.
Blake, Geo. F., Mfg. Co., 114 Liberty St., New York.
International Steam Engineering Co., Atlanta, Ga.
Minneapolis Steel & Machinery Co., 2854 Minnehaha Ave., Minneapolis, Minn.
Ruemmeli-Dawley Mfg. Co., 3900 Chouteau Ave., St. Louis, Mo.
Stocker, George J., 2833 S. Kingshighway Road, St. Louis, Mo.
Wheeler Condenser & Engineering Co., 120 Liberty St., N. Y.
Worthington, Henry R., 114 Liberty St., New York.

136 **TRAPS, STEAM.** For removing condensation from pipe systems.

Albany Steam Trap Co., Albany, N. Y.
American Blower Co., Detroit, Mich.
American District Steam Co., Lockport, N. Y.
Arthur Co., 188 Front St., New York.
Ashcroft Mfg. Co., 85 Liberty St., New York.
Bayley, William, & Sons Co., Milwaukee, Wis.
Belfield, H., & Co., 435 N. Broad St., Philadelphia, Pa.
Bickel, Fred L., 1348 Palmer St., Philadelphia, Pa.
Bonar, Jas., & Co., Inc., Pittsburg, Pa.
Bordo, L. J., Co., 12th and Thompson Sts., Philadelphia, Pa.

TRAPS, STEAM, continued

Boston Steam Specialty Co., 170 Congress St., Boston, Mass. *See adv. page 14.*
Brainerd Steam Trap Co., 509 Chamber of Commerce, Boston, Mass.
Buckeye Iron & Brass Works, Dayton, O.
Cookson, T. J., 1112 Traction Bldg., Cincinnati, Ohio.
Crane Co., 10 N. Jefferson St., Chicago, Ill.
Creamer Steam Specialties Co., 123 Liberty St., New York.
Dame & Townsend Co., 76 John St., New York.
Davis, G. M., Regulator Co., 144 Milwaukee Ave., Chicago, Ill.
D'Este, Julian, Co., 24 Canal St., Boston, Mass.
Direct Separator Co., Syracuse, N. Y.
Eureka Iron Co., 14 N. Canal St., Chicago, Ill.
Eynon-Evans Mfg. Co., 1519 Clearfield St., Philadelphia, Pa.
Flinn, Richard J., West Roxbury, Mass.
Ford, Thos. P., Co., 81 Centre St., New York.
Foskett & Bishop Co., New Haven, Conn.
Griffing, A. A., Iron Co., 449 Communipaw Ave., Jersey City.
Haines, Wm. S., Co., 136 S. 4th St., Philadelphia, Pa.
Handy Trap Co., Philadelphia, Pa.
Helios-Upton Co., Peabody, Mass.
Hoffmann, B., Mfg. Co., Milwaukee, Wis.
Houghton, E. F., & Co., 240 W. Somerset St., Philadelphia, Pa.
Hussey, McCann & Co., 37 Dey St., New York.
Illinois Malleable Iron Co., 32 W. Monroe St., Chicago, Ill.
Jenkins Bros., 71 John St., New York.
Kelly & Jones Co., Greensburg, Pa.
Kieley & Mueller, 34 W. 13th St., New York.
Kitts Mfg. Co., Oswego, N. Y.
Klipfel & Thomas Co., 74 W. Lake St., Chicago, Ill.
Lawler Water-Feed & Damper Regulator Co., 181 Mercer St., New York.
Locke Regulator Co., Salem, Mass.
Lonergan, J. E., & Co., 211 Race St., Philadelphia, Pa.
Lunkenheimer Co., Cincinnati, O.
Marsh, Jas. P., & Co., 224 Washington St., Chicago, Ill.
Monash-Younker Co., 203 S. Canal St., Chicago, Ill.
McCrea, James, & Co., 67 W. Washington St., Chicago, Ill.
McNab & Harlin Mfg. Co., 56 John St., New York.
Nason Mfg. Co., 71 Fulton St., New York.
Providence Steam Trap Co., Providence, R. I.
Reliance Gauge Column Co., Cleveland, O. *See adv. page 15.*
Rutzler, E., 178 Centre St., New York.
Schaeffer & Budenberg Mfg. Co., St. Edwards & Bedford Sts., Brooklyn, N. Y.
Schoonmaker, A. G., Co., 29 West St., New York.
Schuette & Korting Co., 12th & Thompson Sts., Philadelphia.
Smith, James, & Co., Inc., 411 Race St., Philadelphia, Pa.
Standard Steam Specialty Co., 111 5th Ave., New York.
Star Brass Mfg. Co., 114 E. Dedham St., Boston, Mass.
Stephens, Roe, Mfg. Co., Detroit, Mich.
Stewart Heater Co., Buffalo, N. Y.
Strong, Carlisle & Hammond Co., Cleveland, Ohio.
Sturtevant, B. F., Co., Hyde Park, Mass.
Thompson, Richard, & Co., 126 Liberty St., New York.
Thorpe, Platt & Co., 97 Cedar St., New York. *See adv. page 14.*
Union Steam Specialty Co., Scranton, Pa.

TRAPS, STEAM, continued.

Walworth Mfg. Co., 134 Federal St., Boston, Mass.
Watson & McDaniel Co., 146 N. 7th St., Philadelphia, Pa.
See adv. page 12.
Watts Regulator Co., Lawrence, Mass.
Welch & Lawson, 210 Centre St., New York.
Western Tube Co., Kewanee, Ill.
Wright Mfg. Co., Detroit, Mich.

137 **VALVES.** Devices for closing and opening pipes.

138 **Air Automatic.** For allowing the escape automatically of entrapped air; as in the case of steam radiators.

American Radiator Co., Lake & Dearborn Sts., Chicago, Ill.
Ashton Valve Co., 271 Franklin St., Boston, Mass.
Belfield, H., & Co., 435 N. Broad St., Philadelphia, Pa.
Buckeye Iron & Brass Works, Dayton, O.
Coffin Valve Co., Neponset, Mass.
Crane Co., 10 N. Jefferson St., Chicago, Ill.
Crosby Steam Gage & Valve Co., 97 Oliver St., Boston, Mass.
Davis, G. M., Regulator Co., 144 Milwaukee Ave., Chicago, Ill.
Davis & Roesch Temperature Controlling Co., 136 Liberty St., New York.
Eaton, Cole & Burnham Co., 253 Broadway, New York.
Eynon-Evans Mfg. Co., 1519 Clearfield St., Philadelphia, Pa.
Fairbanks Co., Broome & Elm Sts., New York.
Griffing, A. A., Iron Co., 449 Communipaw Ave., Jersey City.
Gurney Heater Mfg. Co., 74 Franklin St., Boston, Mass.
Haydenville Co., Haydenville, Mass.
Hoffman & Billings Mfg. Co., Milwaukee, Wis.
Jenkins Bros., 71 John St., New York.
Lawler Water-Feed & Damper Regulator Co., 181 Mercer St., New York.
Lunkenheimer Co., Cincinnati, O.
McNab & Harlin Mfg. Co., 56 John St., New York.
Mackay Mfg. Co., Newark, N. J.
Magee, Alonzo H., 106-108 Beekman St., New York
Marsh, Jas. P., & Co., 224 Washington St., Chicago, Ill.
Monash-Younker Co., 205 S. Canal St., Chicago, Ill.
Morgan & Co., 40 Dearborn St., Chicago, Ill.
Penn. Engineering Co., 312 Cherry St., Philadelphia, Pa.
Pierce, Butler & Pierce Mfg. Co., Syracuse, N. Y.
Quincy Valve & Mfg. Co., Quincy, Ill.
Rensselaer Mfg. Co., Troy, N. Y.
Russell, W. A., & Co., 89 Centre St., New York.
Smith, H. B., Co., Westfield, Mass.
Utica Steam Gauge Co., Frankfort, N. Y.
Walworth Mfg. Co., 134 Federal St., Boston, Mass.

139 **Back Pressure.** For throttling the escape of a fluid so as to maintain a certain pressure in the pipes leading to the valve.

Acton, John, 118 John St., Brooklyn, N. Y.
American District Steam Co., Lockport, N. Y.
Arthur Co., 188 Front St., New York.
Belfield, H., & Co., 435 North Broad St., Philadelphia, Pa.
Bordo, L. J., Co., 12th and Thompson Sts., Philadelphia, Pa.
Boston Brass Co., 36 Oliver St., Boston, Mass.

VALVES, BACK PRESSURE, continued.

Buckeye Iron & Brass Works, Dayton, O.
Chapman Valve Manufacturing Co., Indian Orchard, Mass.
Crane Co., 10 N. Jefferson St., Chicago, Ill.
Crosby Steam Gage & Valve Co., 97 Oliver St., Boston, Mass.
Davis, G. M., Regulator Co., 144 Milwaukee Ave., Chicago, Ill.
Eaton, Cole & Burnham Co., 253 Broadway, New York.
Fairbanks Co., Broome & Elm Sts., New York.
Ford, Thos. P., Co., 81 Centre St., New York.
Foster Engineering Co., Newark, N. J.
Haydenville Co., Haydenville, Mass.
Hoffmann, B., Mfg. Co., Milwaukee, Wis.
Hussey, McCann & Co., 37 Dey St., New York.
Jarecki Mfg. Co., Erie, Pa.
Jenkins Bros., 71 John St., New York.
Kelly & Jones Co., Greensburg, Pa.
Kieley & Mueller, 34 W. 13th St., New York.
Klipfel & Thomas Co., 74 W. Lake St., Chicago, Ill.
Locke Regulator Co., Salem, Mass.
Ludlow Valve Mfg. Co., Troy, N. Y.
McGowan, John H., Co., Cincinnati, O.
McNab & Harlin Mfg. Co., 56 John St., New York.
Monash-Younker Co., 205 South Canal St., Chicago, Ill.
Pittsburg Valve Foundry & Construction Co., Pittsburg, Pa.
Pratt & Cady Co., Hartford, Conn.
Queen City Brass & Iron Works, Cincinnati, O.
Quincy Valve & Manufacturing Co., Quincy, Ill.
Regester's, J., Sons Co., Baltimore, Md.
Schutte & Korting Co., 12th & Thompson Sts., Philadelphia.
Standard Steam Specialty Co., 111 5th Ave., New York.
Walworth Manufacturing Co., 134 Federal St., Boston, Mass.
Western Tube Co., Kewanee, Ill.

140 **Balance.** Regulating valves in which the pressure is regulated by a weight sliding on a lever arm.

Acton, John, 118 John St., Brooklyn, N. Y.
American District Steam Pump Co., Lockport, N. Y.
Arthur Co., 188 Front St., New York.
Belfield, H., & Co., 435 N. Broad St., Philadelphia, Pa.
Bonar, Jas., & Co., Inc., Pittsburg, Pa.
Boston Steam Specialty Co., 170 Congress St., Boston, Mass.
Coffin Valve Co., Neponset, Mass.
Crane Co., 10 N. Jefferson St., Chicago, Ill.
Davis, G. M., Regulator Co., 144 Milwaukee Ave., Chicago, Ill.
Eynon-Evans Manufacturing Co., 1519 Clearfield St., Philda.
Fairbanks Co., Broome & Elm Sts., New York.
Gardner Governor Co., Quincy, Ill.
Hoffmann, B., Mfg. Co., Milwaukee, Wis.
Kieley & Mueller, 34 W. 13th St., New York.
Klipfel & Thomas Co., 74 W. Lake St., Chicago, Ill.
Mason Regulator Co., 158 Summer St., Boston, Mass
McNab & Harlin Mfg. Co., 56 John St., New York.
Schaeffer & Budenberg Mfg. Co., St. Edwards & Bedford Sts., Brooklyn, N. Y.
Waters Governor Co., 34 Oliver St., Boston, Mass.
Watson & McDaniel Co., 146 N. 7th St., Philadelphia, Pa.

VALVES, continued.

141 **Blow Off.** For emptying steam boilers.

Acton, John, 118 John St., Brooklyn, N. Y.
Ashton Valve Co., 271 Franklin St., Boston, Mass.
Belfield, H., & Co., 435 North Broad St., Philadelphia, Pa.
Best Manufacturing Co., Pittsburg, Pa.
Bonner, Wm. T., & Co., 53 State St., Boston, Mass.
Bordo, L. J., Co., 12th and Thompson Sts., Philadelphia, Pa.
Buckeye Iron & Brass Works, Dayton, O.
Cadman, A. W., Manufacturing Co., Pittsburg, Pa.
Central Brass Works, Cincinnati, O.
Coffin Valve Co., Neponset, Mass.
Crane Co., 10 N. Jefferson St., Chicago, Ill.
Crosby Steam Gage & Valve Co., 97 Oliver St., Boston, Mass.
Eynon-Evans Manufacturing Co., 1519 Clearfield St., Philadelphia, Pa.
Fairbanks Co., Broome & Elm Sts., New York.
Homestead Valve Manufacturing Co., Pittsburg, Pa.
Jenkins Bros., 71 John St., New York.
Kelly & Jones Co., Greensburg, Pa.
Lonergan, J. E., & Co., 211 Race St., Philadelphia, Pa.
Lunkenheimer Co., Cincinnati, Ohio. *See adv. page 22.*
McNab & Harlin Mfg. Co., 56 John St., New York.
Perkes, Charles, 627 Arch St., Philadelphia, Pa.
Pittsburg Valve Foundry & Construction Co., Pittsburg, Pa.
Pittsburgh Gage & Supply Co., Pittsburg, Pa.
Powell, Wm., Co., Cincinnati, O.
Pratt & Cady Co., Hartford, Conn.
Queen City Brass & Iron Works, Cincinnati, O.
Quincy Valve & Manufacturing Co., Quincy, Ill.
Reliable Mfg. Co., Pittsburg, Pa.
Standard Steam Specialty Co., 111 5th Ave., New York.
Star Brass Mfg. Co., 114 E. Dedham St., Boston, Mass.
Walworth Manufacturing Co., 134 Federal St., Boston, Mass.
Watson & McDaniel Co., 146 North 7th St., Philadelphia, Pa.

142 **Check.** Having a valve which rises to allow the passage of the fluid in one direction, but which prevents its return.

Acton, John, 118 John St., Brooklyn, N. Y.
Albany Steam Trap Co., Albany, N. Y.
Alpena Industrial Works, Alpena, Mich.
American Valve Co., Coxsackie, N. Y.
Arthur Co., 188 Front St., New York.
Bailey-Farrell Manufacturing Co., Pittsburg, Pa.
Belfield, H., & Co., 435 North Broad St., Philadelphia, Pa.
Belknap Manufacturing Co., Bridgeport, Conn.
Best Manufacturing Co., Pittsburg, Pa.
Boston Steam Specialty Co., 170 Congress St., Boston, Mass.
Buckeye Iron & Brass Works, Dayton, O.
Central Brass Works, Cincinnati, O.
Chapman Valve Manufacturing Co., Indian Orchard, Mass.
Coffin Valve Co., Neponset, Mass.
Cook, A. D., Lawrenceburg, Ind.
Crane Co., 10 N. Jefferson St., Chicago, Ill.
Crosby Steam Gage & Valve Co., 97 Oliver St., Boston, Mass.
Davis, G. M. Regulator Co., 144 Milwaukee Ave., Chicago, Ill.
Detroit Lubricator Co., Detroit, Mich.

VALVES, CHECK, continued

Draper Mfg. Co., Port Huron, Mich.
Eastwood Wire Manufacturing Co., Belleville, N. J.
Eaton, Cole & Burnham Co., 253 Broadway, New York.
Eynon-Evans Manufacturing Co., 1519 Clearfield St., Philda.
Fairbanks Co., Broome and Elm Sts., New York.
Hancock Inspirator Co., 87 Liberty St., New York.
Haydenville Co., Haydenville, Mass.
Hermance Valve Co., Syracuse, N. Y.
Hoffmann, B., Mfg. Co., Milwaukee, Wis.
Jenkins Bros., 71 John St., New York.
Kelly & Jones Co., Greensburg, Pa.
Kennedy Valve Manufacturing Co., 57 Beekman St., New York.
Kinsey & Mahler Co., Peoria, Ill.
Libby Mfg. Co., 147 Varick St., New York.
Locke Regulator Co., Salem, Mass.
Lonergan, J. E., & Co., 211 Race St., Philadelphia, Pa.
Ludlow Valve Manufacturing Co., Troy, N. Y.
Lunkenheimer Co., Cincinnati, Ohio. *See adv. page 22.*
McDonald, A. Y., & Morrison Manufacturing Co., Dubuque, Ia.
McNab & Harlin Mfg. Co., 56 John St., New York.
Michigan Brass & Iron Works, Detroit, Mich.
Mueller, H., Mfg. Co., Decatur, Ill.
Nelson, Chas., 439 E. 10th St., New York.
New Bedford Boiler & Machine Co., New Bedford, Mass.
Nolte Brass Co., Springfield, O.
Ohio Brass Co., Mansfield, O.
Oil Well Supply Co., Pittsburg, Pa.
Perkes, Chas., 627 Arch St., Philadelphia, Pa.
Pittsburg Valve Foundry & Construction Co., Pittsburg, Pa.
Powell, Wm., Co., Cincinnati, O.
Pratt & Cady Co., Hartford, Conn.
Queen City Brass & Iron Works, Cincinnati, O.
Quincy Valve & Manufacturing Co., Quincy, Ill.
Regester's, J., Sons Co., Baltimore, Md.
Rundle-Spence Manufacturing Co., Milwaukee, Wis.
Schutte & Korting Co., 12th & Thompson Sts., Philadelphia.
Springfield Brass Co., Springfield, O.
Stephens, Roe, Manufacturing Co., Detroit, Mich.
Thomas Brass & Iron Co., Waukegan, Ill.
Walworth Manufacturing Co., 134 Federal St., Boston, Mass.
Western Tube Co., Kewanee, Ill.
Wood, R. D., & Co., 400 Chestnut St., Philadelphia, Pa.

143 **Chronometer.** Rotary valves fitted to taper seats.

Bonner, Wm. T., & Co., 53 State St., Boston, Mass.
Crane Co., 10 N. Jefferson St., Chicago, Ill.
Kelly & Jones Co., Greensburg, Pa.
McNab & Harlin Mfg. Co., 56 John St., New York.
Union Water Meter Co., Worcester, Mass.

144 **Float.** For maintaining a certain level in tanks.

Arthur Co., 188 Front St., New York.
Belfield, H., & Co., 435 N. Broad St., Philadelphia, Pa.
Boston Brass Co., 36 Oliver St., Boston, Mass.
Crane Co., 10 N. Jefferson St., Chicago, Ill.
Davis, G. M., Regulator Co., 144 Milwaukee Ave., Chicago, Ill.
Fairbanks Co., Broome & Elm Sts., New York.

VALVES, FLOAT, continued.

Foster, F. W., Mfg. Co., 99 Haverhill St., Boston, Mass.
Harris, Geo. P., & Bro., 62 W. Lake St., Chicago, Ill.
Haydenville Co., Haydenville, Mass.
Hermance Valve Co., Syracuse, N. Y.
Homestead Valve Manufacturing Co., Pittsburg, Pa.
Lonergan, J. E., & Co., 211 Race St., Philadelphia, Pa.
McNab & Harlin Mfg. Co., 56 John St., New York.
Novelty Mfg. Co., Omaha, Neb.
Perkes, Charles, 627 Arch St., Philadelphia, Pa.

145 **Foot.** Used at the foot of suction pipes to maintain a full supply of the fluid pumped.

Arthur Co., 188 Front St., New York.
Belfield, H., & Co., 435 North Broad St., Philadelphia, Pa.
Blake, George F., Mfg. Co., 114 Liberty St., New York.
Buckeye Iron & Brass Works, Dayton, O.
Coffin Valve Co., Neponset, Mass.
Crane Co., 10 N. Jefferson St., Chicago, Ill.
Deane Steam Pump Co., Holyoke, Mass.
Eaton, Cole & Burnham Co., 253 Broadway, New York.
Fairbanks Co., Broome & Elm Sts., New York.
Haydenville Co., Haydenville, Mass.
Hoffmann, B., Mfg. Co., Milwaukee, Wis.
Holly Mfg. Co., Lockport, N. Y.
Jarecki Mfg. Co., Erie, Pa.
Kelly & Jones Co., Greensburg, Pa.
Laidlaw-Dunn-Gordon Co., 114 Liberty St., New York.
Ludlow Valve Manufacturing Co., Troy, N. Y.
McGowan, John H., Co., Cincinnati, O.
McNab & Harlin Mfg. Co., 56 John St., New York.
Michigan Brass & Iron Works, Detroit, Mich.
Nelson, Chas., 439 E. 10th St., New York.
New Bedford Boiler & Machine Co., New Bedford, Mass.
Newman Mfg. Co., 26 Cortlandt St., New York.
Perkes, Charles, 627 Arch St., Philadelphia, Pa.
Pittsburg Valve Foundry & Construction Co., Pittsburg, Pa.
Snow Steam Pump Works, 114 Liberty St., New York.
Stephens, Roe, Manufacturing Co., Detroit, Mich.
Western Tube Co., Kewanee, Ill.
Wood, R. D., & Co., 400 Chestnut St., Philadelphia, Pa.
Worthington, Henry R., 114 Liberty St., New York.

146 **Gate.** In which the internal opening is closed by a piece moving across a seat at right angles to its axis.

Albany Steam Trap Co., Albany, N. Y.
American District Steam Co., Lockport, N. Y.
American Valve Co., Coxsackie, N. Y.
Arthur Co., 188 Front St., New York.
Belfield, H., & Co., 435 North Broad St., Philadelphia, Pa.
Best Manufacturing Co., Pittsburg, Pa.
Bourbon Copper & Brass Works, Cincinnati, O.
Buckeye Iron & Brass Works, Dayton, O.
Central Brass Works, Cincinnati, O.
Chapman Valve Manufacturing Co., Indian Orchard, Mass.
Coffin Valve Co., Neponset, Mass.
Crane Co., 10 N. Jefferson St., Chicago, Ill.

VALVES, GATE, continued

Crosby Steam Gage & Valve Co., 97 Oliver St., Boston, Mass.
Dame & Townsend Co., 76 John St., New York.
Darling Pump & Mfg. Co., Williamsport, Pa.
Drummond, M. J., & Co., 192 Broadway, New York.
Eaton, Cole & Burnham Co., 253 Broadway, New York.
Eddy Valve Co., South Waterford, N. Y.
Fairbanks Co., Broome and Elm Sts., New York.
Forest City Brass Works, Cleveland, O.
Hall, C. F., & Son, Syracuse, N. Y.
Haydenville Co., Haydenville, Mass.
Hoffman & Billings Co., Milwaukee, Wis.
Hoffmann, B., Mfg. Co., Milwaukee, Wis.
Jarecki Mfg. Co., Erie, Pa.
Jenkins Bros., 71 John St., New York.
Kelly & Jones Co., Greensburg, Pa.
Kennedy Valve Manufacturing Co., 57 Beekman St., New York.
Libby Mfg. Co., 147 Varick St., New York.
Ludlow Valve Mfg. Co., Troy, N. Y.
Lunkenheimer Co., Cincinnati, Ohio. *See adv. page 22.*
McGowan, John H., Co., Cincinnati, O.
McLean, John, 440 Water St., New York.
McNab & Harlin Mfg. Co., 56 John St., New York.
Michigan Brass & Iron Works, Detroit, Mich.
Nelson Valve Co., Wyndmoor, Pa.
Oil Well Supply Co., Pittsburg, Pa.
Pittsburg Valve Foundry & Construction Co., Pittsburg, Pa.
Pleuger & Henger Manufacturing Co., St. Louis, Mo.
Powell, Wm., Co., Cincinnati, O.
Pratt & Cady Co., Hartford, Conn.
Queen City Brass & Iron Works, Cincinnati, O.
Quincy Valve & Manufacturing Co., Quincy, Ill.
Rensselaer Manufacturing Co., Cohoes, N. Y.
Ross Valve Co., Troy, N. Y.
Smith, A. P., Mfg. Co., Newark, N. J.
South Park Foundry & Machine Co., St. Paul, Minn.
Stephens, Roe, Manufacturing Co., Detroit, Mich.
Thomas Brass & Iron Co., Waukegan, Ill.
Vincent Valve Co., Sandusky, O.
Walworth Manufacturing Co., 134 Federal St., Boston, Mass.
Western Tube Co., Kewanee, Ill.
Wood, R. D., & Co., 400 Chestnut St., Philadelphia, Pa.

147 **Globe.**. Disc valves having globular bodies and the openings in the same line.

Albany Steam Trap Co., Albany, N. Y.
American Valve Co., Coxsackie, N. Y.
Bailey-Farrell Manufacturing Co., Pittsburg, Pa.
Bashlin Co., Warren, Pa.
Bath Iron Works, Bath, Me.
Belfield, H., & Co., 435 North Broad St., Philadelphia, Pa.
Belknap Manufacturing Co., Bridgeport, Conn.
Best Manufacturing Co., Pittsburg, Pa.
Boston Steam Specialty Co., 170 Congress St., Boston, Mass.
Buckeye Iron & Brass Works, Dayton, O.
Central Brass Works, Cincinnati, O.
Chapman Valve Manufacturing Co., Indian Orchard, Mass.
Coffin Valve Co., Neponset, Mass.

VALVES, GLOBE, continued

Columbus Brass Co., Columbus, O.
Crane Co., 10 N. Jefferson St., Chicago, Ill.
Crosby Steam Gage & Valve Co., 97 Oliver St., Boston, Mass.
Detroit Lubricator Co., Detroit, Mich.
Eastwood Wire Manufacturing Co., Belleville, N. J.
Eaton, Cole & Burnham Co., 253 Broadway, New York.
Eynon-Evans Manufacturing Co., 1519 Clearfield St., Philda.
Fairbanks Co., Broome and Elm Sts., New York.
Gardner Governor Co., Quincy, Ill.
Hall, C. F., & Son, Syracuse, N. Y.
Hancock Inspirator Co., 87 Liberty St., New York.
Harvey's A., Sons Manufacturing Co., Detroit, Mich.
Hayden & Derby Mfg. Co., 89 Liberty St., New York.
Haydenville Co., Haydenville, Mass.
Hoffmann, B., Mfg. Co., Milwaukee, Wis.
Hoffman & Billings Manufacturing Co., Milwaukee, Wis.
Homestead Valve Manufacturing Co., Pittsburg, Pa.
Jarécki Manufacturing Co., Ltd., Erie, Pa.
Jenkins Bros., 71 John St., New York.
Kelly & Jones Co., Greensburg, Pa.
Kennedy Valve Manufacturing Co., 57 Beekman St., New York.
Kinsey & Mahler Co., Peoria, Ill.
Libby Mfg. Co., 147 Varick St., New York.
Locke Regulator Co., Salem, Mass.
Lonergan, J. E., & Co., 211 Race St., Philadelphia, Pa.
Lunkenheimer Co., Cincinnati, O.
McCambridge & Co., Ltd., 523 Cherry St., Philadelphia, Pa.
McNab & Harlin Mfg. Co., 56 John St., New York.
McGowan, John H., Co., Cincinnati, O.
Mackay Manufacturing Co., Newark, N. J.
Nelson Valve Co., Wyndmoor, Pa.
New Bedford Boiler & Machine Co., New Bedford, Mass.
Nolte Brass Co., Springfield, O.
Ohio Brass Co., Mansfield, O.
Oil Well Supply Co., Pittsburg, Pa.
Pemberthy Injector Co., Detroit, Mich.
Perkes, Charles, 627 Arch St., Philadelphia, Pa.
Pittsburg Valve Foundry & Construction Co., Pittsburg, Pa.
Powell, Wm., Co., Cincinnati, O.
Pratt & Cady Co., Hartford, Conn.
Queen City Brass & Iron Works, Cincinnati, O.
Quincy Valve & Manufacturing Co., Quincy, Ill.
Regester's, J., Sons Co., Baltimore, Md.
Rundle-Spence Manufacturing Co., Milwaukee, Wis.
Russell, W. A., & Co., 89 Centre Street, New York.
Schutte & Korting Co., 12th & Thompson Sts., Philadelphia.
Springfield Brass Co., Springfield, O.
Star Brass Mfg. Co. 114 E. Dedham St., Boston, Mass.
Stephens, Roe, Manufacturing Co., Detroit, Mich.
Thomas Brass & Iron Co., Waukegan, Ill.
Walworth Manufacturing Co., 134 Federal St., Boston, Mass.
Western Tube Co., Kewanee, Ill.

148 **Hydraulic.** For liquids under heavy pressure.

American Steam Gauge & Valve Mfg. Co., 220 Camden St., Boston, Mass.
Arthur Co., 188 Front St, New York.

VALVES, HYDRAULIC, continued.

Ashton Valve Co., 271 Franklin St., Boston, Mass.
Belfield, H., & Co., 435 N. Broad St., Philadelphia, Pa.
Best Manufacturing Co., Pittsburg, Pa.
Bordo, L. J., Co., 12th and Thompson Sts., Philadelphia, Pa.
Buckeye Iron & Brass Works, Dayton, O.
Burroughs, Chas., Co., Newark, N. J.
Chapman Valve Manufacturing Co., Indian Orchard, Mass.
Crane Co., 10 N. Jefferson St., Chicago, Ill.
Drummond, M. J., & Co., 192 Broadway, New York.
Eaton, Cole & Burnham Co., 253 Broadway, New York.
Eynon-Evans Manufacturing Co., 1519 Clearfield St., Philda.
Fairbanks Co., Broome & Elm Sts., New York.
Falkenau-Sinclair Machine Co., 109-115 W. 22d St., Philda.
Homestead Valve Manufacturing Co., 107 Wood St., Pittsburg, Pa.
Ireson, Chas. L., 148 High St., Boston, Mass.
Kennedy Valve Mfg. Co., 57 Beekman St., New York.
Libby Mfg. Co., 147 Varick St., New York.
McCambridge & Co., 523 Cherry St., Philadelphia, Pa.
McNab & Harlin Mfg. Co., 56 John St., New York.
Nelson Valve Co., Wyndmoor, Pa.
Oil Well Supply Co., Pittsburg, Pa.
Perkes, Charles, 627 Arch St., Philadelphia, Pa.
Powell, Wm., Co., Cincinnati, O.
Pratt & Cady Co., Hartford, Conn.
Quincy Valve & Manufacturing Co., Quincy, Ill.
Reliable Mfg. Co., Pittsburg, Pa.
Schutte & Korting Co., 12th & Thompson Sts., Philadelphia.
Star Brass Mfg. Co., 114 E. Dedham St., Boston, Mass.
Walworth Manufacturing Co., 134 Federal St., Boston, Mass.
Watson & McDaniel Co., 146 N. 7th St., Philadelphia, Pa. *See adv. page 12.*
Watson-Stillman Co., 46 Dey St., New York.
Wood, R. D., & Co., 400 Chestnut St., Philadelphia, Pa.

149 **Pop.** See 154, Safety Pop Valve.

150 **Pump.** Suction and delivery check valves forming parts of pumps.

Belfield, H., & Co., 435 North Broad St., Philadelphia, Pa.
Crosby Steam Gage & Valve Co., 97 Oliver St., Boston, Mass.
Crane Co., 10 N. Jefferson St., Chicago, Ill.
Delaware Hard Fibre Co., Wilmington, Del.
Fairbanks Co., Broome & Elm Sts., New York.
Goulds Mfg. Co., Seneca Falls, N. Y.
Jenkins Bros., 71 John St., New York.
Libby Mfg. Co., 147 Varick St., New York.
McNab & Harlin Mfg. Co., 56 John St., New York.
Marston, I. G., & Co., 226 Ruggles St., Boston, Mass. *See adv. page 16.*
Mineralized Rubber Co., 18 Cliff St., New York.
Ohio Brass Co., Mansfield, O.
Perkes, Charles, 627 Arch St., Philadelphia, Pa.
Power Specialty Co., Buffalo, N. Y.
Quaker City Rubber Co., 409 Market St., Philadelphia, Pa.

VALVES, continued.

151 **Radiator.** For steam heating radiators.

Albany Steam Trap Co., Albany, N. Y.
Alpena Industrial Works, Alpena, Mich.
American Valve Co., Coxsackie, N. Y.
Argon Manufacturing Co., Denver, Col.
Belfield, H., & Co., 435 North Broad St., Philadelphia, Pa.
Belknap Manufacturing Co., Bridgeport, Conn.
Blake & Andros, 28 Portland St., Boston, Mass.
Buckeye Iron & Brass Works, Dayton, O.
Central Brass Works, Cincinnati, O.
Chapman Valve Manufacturing Co., Indian Orchard, Mass.
Cochrane, J. A., Cleveland, O.
Crane Co., 10 N. Jefferson St., Chicago, Ill.
Detroit Lubricator Co., Detroit, Mich.
Eaton, Cole & Burnham Co., 253 Broadway, New York.
Fairbanks Co., Broome and Elm Sts., New York.
Forest City Brass Works, Cleveland, O.
Gurney Heater Mfg. Co., 74 Franklin St., Boston, Mass.
Harvey's, A., Sons Manufacturing Co., Detroit, Mich.
Haydenville Co., Haydenville, Mass.
Hoffman, B., Mfg. Co., Milwaukee, Wis.
Hoffman & Billings Manufacturing Co., Milwaukee, Wis.
Jarecki Mfg. Co., Erie, Pa.
Jenkins Bros., 71 John Street, New York.
Kelly & Jones Co., Greensburg, Pa.
Kennedy Valve Manufacturing Co., 57 Beekman St., New York.
Libby Mfg. Co., 147 Varick St., New York.
Lunkenheimer Co., Cincinnati, Ohio. *See adv. page 22.*
McNab & Harlin Mfg. Co., 56 John St., New York.
Mackay Manufacturing Co., Newark, N. J.
Michigan Brass & Iron Works, Detroit, Mich.
Monash & Younker Co., 203 S. Canal St., Chicago, Ill.
Mott, J. L., Iron Works, 84 Beekman St., New York.
Nason Mfg. Co., 71 Fulton St., New York.
Ohio Brass Co., Mansfield, O.
Ohio Brass & Iron Manufacturing Co., Cleveland, O.
Penn Engineering Co., 312 Cherry St., Philadelphia, Pa.
Perkes, Charles, 627 Arch St., Philadelphia, Pa.
Powell, Wm., Co., Cincinnati, O.
Queen City Brass & Iron Works, Cincinnati, O.
Quincy Valve & Manufacturing Co., Quincy, Ill.
Regester's, J., Sons Co., Baltimore, Md.
Stephens, Roe, Manufacturing Co., Detroit, Mich.
Thomas Brass & Iron Co., Waukegan, Ill.
Utica Steam Gauge Co., Frankfort, N. Y.
Walworth Manufacturing Co., 134 Federal St., Boston, Mass.
Western Tube Co., Kewanee, Ill.

152 **Reducing.** For maintaining a certain pressure in the pipes leading from the valve. See 122, Regulators, Pressure.

153 **Safety, Ball and Lever.** For relieving excess pressure in steam boilers, tanks, etc.

Alpena Industrial Works, Alpena, Mich.
Arthur & Co., 188 Front St., New York.
Bailey-Farrell Manufacturing Co., Pittsburg, Pa.

VALVES, SAFETY BALL AND LEVER, continued.

Belfield, H., & Co., 435 North Broad St., Philadelphia, Pa.
Belknap Manufacturing Co., Bridgeport, Conn.
Best Manufacturing Co., Pittsburg, Pa.
Buckeye Iron & Brass Works, Dayton, O.
Cameron, A. S., Steam Pump Works, 433 E. 23d St., N. Y.
Central Brass Works, Cincinnati, O.
Chapman Valve Manufacturing Co., Indian Orchard, Mass.
Consolidated Safety Valve Co., 89 Liberty St., New York.
Craig, E. A., 110 Liberty St., New York.
Crane Co., 10 N. Jefferson St., Chicago, Ill.
Eaton, Cole & Burnham Co., 253 Broadway, New York.
Fairbanks Co., Broome & Elm Sts., New York.
Globe Brass Works, Detroit, Mich.
Harvey's, A., Sons Manufacturing Co., Detroit, Mich.
Haydenville Co., Haydenville, Mass.
Hennebohle, Frank, S. Chicago Ave. & Erie St., Chicago, Ill.
Hoffmann, B., Mfg. Co., Milwaukee, Wis.
Hoffman & Billings Manufacturing Co., Milwaukee, Wis.
Jarecki Mfg. Co., Erie, Pa.
Jenkins Bros., 71 John Street, New York.
Kelly & Jones Co., Greensburg, Pa.
Lonergan, J. E., & Co., 211 Race St., Philadelphia, Pa.
Lunkenheimer Co., Cincinnati, Ohio. *See adv. page 22.*
McDonald, A. Y., & Morrison Manufacturing Co., Dubuque, Ia.
McGowan, John H., Co., Cincinnati, O.
McNab & Harlin Mfg. Co., 56 John St., New York.
Perkes, Charles, 627 Arch St., Philadelphia, Pa.
Pittsburg Valve Foundry & Construction Co., Pittsburg, Pa.
Powell, Wm., Co., Cincinnati, O.
Queen City Brass & Iron Works, Cincinnati, O.
Quincy Valve Manufacturing Co., Quincy, Ill.
Regester's, J., Sons, Baltimore, Md.
Schaeffer & Budenberg Mfg. Co., St. Edwards & Bedford Sts., Brooklyn, N. Y.
Star Brass Manufacturing Co., 114 E. Dedham St., Boston, Mass.
Stephens, Roe, Manufacturing Co., Detroit, Mich.
Thomas Brass & Iron Co., Waukegan, Ill.
Utica Steam Gauge Co., Frankfort, N. Y.
Walworth Manufacturing Co., 134 Federal St., Boston, Mass.
Western Tube Co., Kewanee, Ill.

154 **Safety Pop.** In which the pressure is counterbalanced by a spring of known strength.

Acton, John, 118 John St., Brooklyn, N. Y.
American Steam Gauge & Valve Mfg. Co., 220 Camden St., Boston, Mass.
Ashton Valve Co., 271 Franklin St., Boston, Mass.
Belfield, H., & Co., 435 North Broad St., Philadelphia, Pa.
Central Brass Works, Cincinnati, O.
Coale Muffler & Safety Valve Co., Baltimore, Md.
Consolidated Safety Valve Co., 87 Liberty St., New York.
Crane Co., 10 N. Jefferson St., Chicago, Ill.
Crosby Steam Gage & Valve Co., 97 Oliver St., Boston, Mass.
Fairbanks Co., Broome & Elm Sts., New York.
Foster Engineering Co., Newark, N. J.

VALVES, SAFETY POP, continued

Kunkle, E. B., & Co., Fort Wayne, Ind.
Lonergan, J. E., & Co., 211 Race St., Philadelphia, Pa.
Lunkenheimer Co., Cincinnati, Ohio. *See adv. page 22.*
Pittsburg Valve, Foundry & Construction Co., Pittsburg, Pa.
Quincy Valve & Manufacturing Co., Quincy, Ill.
Safety Cylinder Valve Co., Mansfield, O.
Schaeffer & Budenberg Mfg. Co., St. Edwards & Bedford Sts., Brooklyn, N. Y.
Star Brass Mfg. Co., 114 E. Dedham St., Boston, Mass.
Stephens, Roe, Manufacturing Co., Detroit, Mich.
Utica Steam Gauge Co., Frankfort, N. Y.

155 **Throttle.** Stop valves used for starting and stopping engines.

Bath Iron Works, Bath, Me.
Belfield, H., & Co., 435 North Broad St., Philadelphia, Pa.
Bonner, Wm. T., & Co., 53 State St., Boston, Mass.
Bordo, L. J., Co., 12th and Thompson Sts., Philadelphia, Pa.
Buckeye Iron & Brass Works, Dayton, O.
Central Brass Works, Cincinnati, O.
Chapman Valve Manufacturing Co., Indian Orchard, Mass.
Craig, E. A., 110 Liberty St., New York.
Crane Co., 10 N. Jefferson St., Chicago, Ill.
Crosby Steam Gage & Valve Co., 97 Oliver St., Boston, Mass.
Eaton, Cole & Burnham Co., 253 Broadway, New York.
Fairbanks Co., Broome & Elm Sts., New York.
Haydenville Co., Haydenville, Mass.
Hoffmann, B., Mfg. Co., Milwaukee, Wis.
Jarecki Mfg. Co., Erie, Pa.
Keystone Brass Co., Erie, Pa.
Lane & Bodley Co., Cincinnati, O.
Libby Mfg. Co., 147 Varick St., New York.
Lunkenheimer Co., Cincinnati, Ohio. *See adv. page 22.*
McNab & Harlin Mfg. Co., 56 John St., New York.
New Bedford Boiler & Machine Co., New Bedford, Mass.
Ohio Brass Co., Mansfield, O.
Pittsburg Valve, Foundry & Construction Co., Pittsburg, Pa.
Powell, Wm., Co., Cincinnati, O.
Pratt & Cady Co., Hartford, Conn.
Schutte & Korting Co., 12th & Thompson Sts., Philadelphia.
Stephens, Roe, Manufacturing Co., Detroit, Mich.
Walworth Manufacturing Co., 134 Federal Street, Boston, Mass.

156 **Water Relief.** Safety valves on steam engines to prevent cylinder breakage on account of water.

Acton, John, 118 John St., Brooklyn, N. Y.
Arthur Co., 188 Front St., New York.
Ashton Valve Co., 271 Franklin St., Boston, Mass.
Belfield, H., & Co., 435 North Broad St., Philadelphia, Pa.
Blake, George F., Mfg. Co., 114 Liberty St., New York.
Bordo, L. J., Co., 12th and Thompson Sts., Philadelphia, Pa.
Boston Steam Specialty Co., 170 Congress St., Boston, Mass.
Buckeye Iron & Brass Works, Dayton, O.
Consolidated Safety Valve Co., 87 Liberty St., New York.
Craig, E. A., 110 Liberty St., New York.
Crane Co., 10 N. Jefferson St., Chicago, Ill.
Crosby Steam Gauge & Valve Co., 97 Oliver St., Boston, Mass.

VALVES, WATER RELIEF, continued

Davis, G. M., Regulator Co., 144 Milwaukee Ave., Chicago, Ill.
D'Este, Julian, Co., 24 Canal St., Boston, Mass.
Fairbanks Co., Broome and Elm Sts., New York.
Hermance Valve Co., Syracuse, N. Y.
Kieley & Mueller, 34 W. 13th St., New York.
Locke Regulator Co., Salem, Mass.
Lombard Governor Co., 36 Whittier St., Boston, Mass.
Lonergan, J. E., & Co., 211 Race Street, Philadelphia, Pa.
Ludlow Valve Manufacturing Co., Troy, N. Y.
Lunkenheimer Co., Cincinnati, Ohio. *See adv. page 22.*
McNab & Harlin Mfg. Co., 56 John St., New York.
Michigan Brass & Iron Works, Detroit, Mich.
Perkes, Charles, 627 Arch St., Philadelphia, Pa.
Pittsburg Valve, Foundry & Construction Co., Pittsburg, Pa.
Quincy Valve & Manufacturing Co., Quincy, Ill.
Safety Cylinder Valve Co., Mansfield, O.
Schutte & Korting Co., 12th & Thompson Sts., Philadelphia.
Star Brass Manufacturing Co., 114 E. Dedham St., Boston,
Stephens, Roe, Manufacturing Co., Detroit, Mich.
Watson & McDaniels Co., 146 N. 7th St., Philadelphia, Pa.
Wood, R. D., & Co., 400 Chestnut St., Philadelphia, Pa.

157 **"Y."** In which the openings are opposite, and the valve stems inclined to an angle of about 45 deg. with the axis.

Belfield, H., & Co., 435 N. Broad St., Philadelphia, Pa.
Bonner, Wm. T., & Co., 53 State St., Boston, Mass.
Crane Co., 10 N. Jefferson St., Chicago, Ill.
Eaton, Cole & Burnham Co., 253 Broadway, New York.
Eynon-Evans Mfg. Co., 1519 Clearfield St., Philadelphia, Pa.
Hancock Inspirator Co., 89 Liberty St., New York.
Hayden & Derby Mfg. Co., 89 Liberty St., New York.
Haydenville Co., Haydenville, Mass.
Jenkins Bros., 71 John St., New York.
Libby Mfg. Co., 147 Varick St., New York.
Lunkenheimer Co., Cincinnati, Ohio. *See adv. page 22.*
Pratt & Cady Co., Hartford, Ct.
Western Tube Co., Kewanee, Ill.

158 **WELDING MACHINES, FLUE.**

Draper Mfg. Co., Port Huron, Mich.
Grote Mfg. Co., Evansville, Ind.
Maddock & Herschell, Princeton, Ind.

159 **WHISTLES, CHIME.** A combination of whistles so proportioned as to make a harmonious sound.

Ashcroft Mfg. Co., 89 Liberty St., New York.
Ashton Valve Co., 271 Franklin St., Boston, Mass.
Belfield, H., & Co., 435 No. Broad St., Philadelphia, Pa.
Buckeye Iron & Brass Works, Dayton, O.
Crane Co., 10 N. Jefferson St., Chicago, Ill.
Crosby Steam Gage & Valve Co., 97 Oliver St., Boston, Mass.
Eastwood Wire Mfg. Co., Belleville, N. J.
Eaton, Cole & Burnham Co., 253 Broadway, New York.
Hancock Inspirator Co., 89 Liberty St., New York.
Jarecki Mfg. Co., Ltd., Erie, Pa.
Kinsley Mfg. Co., Bridgeport, Conn.

WHISTLES, CHIME, continued.

Lonergan, J. E., & Co., 211 Race St., Philadelphia, Pa.
Lunkenheimer Co., Cincinnati, Ohio. *See adv. page 22.*
McNab & Harlin Mfg. Co., 56 John St., New York.
Ohio Brass Co., Mansfield, O.
Powell, Wm. Co., Cincinnati, O.
Queen City Brass & Iron Works, Cincinnati, O.
Schaeffer & Budenberg Mfg. Co., St. Edwards & Bedford Sts., Brooklyn, N. Y.
Sherwood Mfg. Co., Buffalo, N. Y.
Star Brass Mfg. Co., 114 E. Dedham St., Boston, Mass.

160 **Plain.** Operated by steam, air or gas, under pressure.

American Steam Gauge & Valve Mfg. Co., 220 Camden St., Boston, Mass.
Ashton Valve Co., 271 Franklin St., Boston, Mass.
Belfield, H., & Co., 435 No. Broad St., Philadelphia, Pa.
Buckeye Iron & Brass Works, Dayton, O.
Central Brass Works, Cincinnati, O.
Cochrane, J. A., Cleveland, O.
Crane Co., 10 N. Jefferson St., Chicago, Ill.
Crosby Steam Gage & Valve Co., 97 Oliver St., Boston, Mass.
Eastwood Wire Mfg. Co., Belleville, N. J.
Eaton, Cole & Burnham Co., 253 Broadway, New York.
Haydenville Co., Haydenville, Mass.
Hoffman & Billings Mfg. Co., Milwaukee, Wis.
Jarecki Mfg. Co., Ltd., Erie, Pa.
Kelly & Jones Co., Greensburg, Pa.
Kinsley Mfg. Co., Bridgeport, Conn.
Lonergan, J. E., & Co., 211 Race St., Philadelphia, Pa.
Lunkenheimer Co., Cincinnati, O.
McNab & Harlin Mfg. Co., 56 John St., New York.
Nolte Brass Co., Springfield, O.
Powell, Wm., Co., Cincinnati, O.
Queen City Brass & Iron Works, Cincinnati, O.
Regester's, J., Sons, Baltimore, Md.
Schaeffer & Rudenberg Mfg. Co., St. Edwards and Bedford Sts., Brooklyn, N. Y.
Springfield Brass Co., Springfield, O.
Star Brass Mfg. Co., 114 E. Dedham St., Boston, Mass.
Thomas Brass & Iron Co., Waukegan, Ill.
Union Water Meter Co., Worcester, Mass.
Walworth Mfg. Co., 134 Federal St., Boston, Mass.

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161 POWER TRANSMISSION APPLIANCES.

162 BEARINGS, SHAFTING.

163 **Base Plates.** For supporting pillow blocks or journal boxes.

American Tool & Machine Co., 109 Beach St., Boston, Mass.
Bartlett, C. O., & Snow Co., Cleveland, Ohio.
Borden & Selleck Co., 48 Lake St., Chicago, Ill.

BASE PLATES, continued

Cresson, Geo. V., Co., Allegheny Ave. W. of 17th St., Philda.
Diamond Iron Works, Minneapolis, Minn.
Dodge Mfg. Co., Mishawaka, Ind.
Falls Rivet & Machine Co., Cuyahoga Falls, O.
Greenwald, I. & E. Co., 720 E. Pearl St., Cincinnati, O. *See adv. page 4.*
Howard Iron Works, Buffalo, N. Y.
Hunter, Jas., Machine Co., North Adams, Mass.
Jeffrey Mfg. Co., Columbus, O.
Jones & Laughlin Steel Co., Pittsburg, Pa.
Kaestner, Chas., & Co., 241 S. Jefferson St., Chicago, Ill.
Klein, Chas. C., Marshall & Cambria Sts., Philadelphia, Pa.
Lane & Bodley Co., Cincinnati, O.
Link-Belt Machinery Co., 39th St. and Stewart Ave., Chicago Ill.
Medart Patent Pulley Co., St. Louis, Mo.
Minneapolis Steel & Machinery Co., 2854 Minnehaha Ave., Minneapolis, Minn.
Robins Conveying Belt Co., Park Row Bldg., New York.
Strait, H. N., Mfg. Co., Kansas City, Kan.
Townsend Furnace & Machine Shop, Albany, N. Y.
Williamsport Clutch & Pulley Co., Williamsport, Pa.
Wood's, T. B., Sons, Chambersburg, Pa.

164 **Blocks, Pillow.** Low shaft bearings, resting on the floor.

Abele, Chris, 537 West 50th St., New York.
American Tool & Machine Co., 109 Beach St., Boston, Mass.
Bartlett, C. O., & Snow Co., Cleveland, Ohio.
Borden & Selleck Co., 48 Lake St., Chicago, Ill.
Brown, A. & F., Co., 25 Dey St., New York.
Cresson, Geo. V., Co., Allegheny Ave., W. of 17th St., Philda.
Dodge Mfg. Co., Mishawaka, Ind.
Falls Rivet & Machine Co., Cuyahoga Falls, O.
Greenwald, I. & E. Co., 720 E. Pearl St., Cincinnati, O.
Hill Clutch Co., Cleveland, O.
Howard Iron Works, Buffalo, N. Y.
Hunter, James, Machine Co., North Adams, Mass.
Jeffrey Mfg. Co., Columbus, O.
Jones, E. D., & Sons Co., Pittsfield, Mass.
Jones & Laughlin Steel Co., Pittsburg, Pa.
Kelly Foundry & Machine Co., Goshen, Ind.
Kilburn, Lincoln & Co., Fall River, Mass.
Klein, Chas. C., Marshall & Cambria Sts., Philadelphia, Pa.
Lane & Bodley Co., Cincinnati, O.
Link-Belt Machinery Co., 39th St. and Stewart Ave., Chicago Ill.
McMurray, C. F., Co., Troy, N. Y.
Medart Patent Pulley Co., St. Louis, Mo.
Minneapolis Steel & Machinery Co., 2854 Minnehaha Ave., Minneapolis, Minn.
Olney & Warrin, 36 Dey St., New York.
Oneida Steel Pulley Co., Oneida, N. Y.
Poole Engineering & Machine Co., Baltimore, Md.
Robins Conveying Belt Co., Park Row Bldg., New York.
Sellers, Wm., & Co., Inc., 1600 Hamilton St., Philadelphia, Pa.
Smith, Jas. Woolen Machinery Co., 411 Race St., Philda, Pa.
Stilwell-Bierce & Smith-Vaile Co., Dayton, O.

BLOCKS, PILLOW, continued.

Strait, H. N., Mfg. Co., Kansas City, Kan.
Townsend Furnace & Machine Shop, Albany, N. Y.
Tranter-Davison Mfg. Co., Pittsburg, Pa.
Valley Iron Works, Williamsport, Pa.
Welch, T. F., & Co., 55 Sudbury St., Boston, Mass.
Weller Mfg. Co., 118 North Ave., Chicago, Ill.
Willamette Iron & Steel Works, Portland, Ore.
Williamsport Clutch & Pulley Co., Williamsport, Pa.
Wood's, T. B., Sons, Chambersburg, Pa.

165 **Boxes, Journal.** The parts of bearings in which the shaft rotates.

Abele, Chris., 537 W. 50th St., New York.
American Tool & Machine Co., 109 Beach St., Boston, Mass.
Bartlett, C. O., & Snow Mfg. Co., Cleveland, Ohio.
Borden & Selleck Co., 48 Lake St., Chicago, Ill.
Brown, A. & F., Co., 25 Dey St., New York.
Cresson, Geo. V., Co., Allegheny Ave., W. of 17th St., Philda, Pa.
Dodge Mfg. Co., Mishawaka, Ind.
Hess-Snyder Co., Massillon, O.
Howard Iron Works, Buffalo, N. Y.
Jones & Laughlin Steel Co., Pittsburg, Pa.
Kaestner, Chas. & Co., 241 So. Jefferson St., Chicago, Ill.
Kilburn, Lincoln, & Co., Fall River, Mass.
Klein, Chas. C., Marshall & Cambria Sts., Philadelphia, Pa.
Lane & Bodley Co., Cincinnati, O.
Liddell Co., Charlotte, N. C.
Medart Patent Pulley Co., St. Louis, Mo.
Minneapolis Steel & Machinery Co., 2854 Minnehaha Ave., Minneapolis, Minn.
New Jersey Foundry & Machine Co., 9 Murray St., New York.
Oneida Steel Pulley Co., Oneida, N. Y.
Poole Engineering & Machine Co., Baltimore, Md.
Stilwell-Bierce & Smith-Vaile Co., Dayton, O.
Strait, H. N., Mfg. Co., Kansas City, Kan.
Townsend Furnace & Machine Shop, Albany, N. Y.
Valley Iron Works, Williamsport, Pa.
Welch, T. F., & Co., 55 Sudbury St., Boston, Mass.
Weller Mfg. Co., 118 North Ave., Chicago., Ill.
Williamsport Clutch & Pulley Co., Williamsport, Pa.
Woods, T. B., Sons, Chambersburg, Pa.

166 **Brackets, Wall.** Brackets fastened to the wall, for carrying bearings.

Abele, Chris., 537 W. 50th St., New York.
Allis-Chalmers Co., New York Life Bldg., Chicago, Ill.
American Tool & Machine Co., 109 Beach St., Boston, Mass.
Bartlett, C. O., & Snow Co., Cleveland, Ohio.
Borden & Selleck Co., 48 Lake St., Chicago, Ill.
Brown, A. & F., Co., 25 Dey St., New York.
Cresson, Geo. V., Co., Allegheny Ave., W. of 17th St., Philda, Pa.
Diamond Iron Works, Minneapolis, Minn.
Dodge Mfg. Co., Mishawaka, Ind.
Falls Rivet & Machine Co., Cuyahoga Falls, N. Y.
Greenwald, I. & E. Co., 720 E. Pearl St., Cincinnati, O. *See adv. page 4.*

ACKETS, WALL, continued

Howard Iron Works, Buffalo, N. Y.
Hunter, James, Machine Co., North Adams, Mass.
Jeffrey Mfg. Co., Columbus, Ohio.
Jones & Laughlin Steel Co., Pittsburg, Pa.
Kaestner, Chas., & Co., 241 S. Jefferson St., Chicago, Ill.
Klein, Chas. C., Marshall & Cambria Sts., Philadelphia, Pa.
Lane & Bodley Co., Cincinnati, O.
Link-Belt Machinery Co., 39th St. and Stewart Ave., Chicago, Ill.
Liddell Co., Charlotte, N. C.
Medart Patent Pulley Co., St. Louis, Mo.
Minneapolis Steel & Machinery Co., 2854 Minnehaha Ave., Minneapolis, Minn.
Moore & White Co., 15th St. & Lehigh Ave., Philadelphia, Pa.
Perkins, B. F., & Son, Holyoke, Mass. *See adv. page 24.*
Poole Engineering & Machine Co., Baltimore, Md.
Robins Conveying Belt Co., Park Row Bldg., New York.
Sellers, Wm., & Co., Inc., 1600 Hamilton St., Philadelphia, Pa.
Smith, Jas., Woolen Machinery Co., 411 Race St., Philda, Pa.
Stilwell-Bierce & Smith-Vaile Co., Dayton, O.
Strait, H. N., Mfg. Co., Kansas City, Kan.
Townsend Furnace & Machine Shop, Albany, N. Y.
Weller Mfg. Co., 118 North Ave., Chicago, Ill.
Williamsport Clutch & Pulley Co., Williamsport, Pa.
Wood's, T. B., Sons, Chambersburg, Pa.

7 BELTING.

8 Canvas, Stitched and Cotton.

Bartlett, C. O., & Snow Co., Cleveland, Ohio.
Boston Belting Co., 256 Devonshire St., Boston, Mass.
Chesapeake Belting Co., Baltimore, Md.
Empire Manufacturing Co., Lockport, N. Y.
Empire Rubber Mfg. Co., Trenton, N. J.
Fayerweather & Ladew, Inc., 91 Liberty St., New York.
Gandy Belting Co., Baltimore, Md.
Gilmer, L. H., & Co., 3952 Market St., Philadelphia, Pa.
Ireson, Chas. L., 148 High St., Boston, Mass.
Kaestner, Chas., & Co., 241 So. Jefferson St., Chicago, Ill.
Lake Shore Rubber Co., Erie, Pa.
Main Belting Co., 1233 Carpenter St., Philadelphia, Pa.
Pennsylvania Rubber Co., Jeannette, Pa.
Quaker City Rubber Co., 409 Market St., Philadelphia, Pa.
Robins Conveying Belt Co., Park Row Bldg, New York.
Russell Mfg. Co., Middletown, Conn.
Rossendale-Reddaway Belting & Hose Co., Newark, N. J.
Sawyer Belting Co., East Cambridge, Mass.
Stilwell-Bierce & Smith-Vaile Co., Dayton, O.

9 Chain or Link.

Aultman Co., Canton, O.
Borden & Selleck Co., 48 Lake St., Chicago, Ill.
Bradlee & Co., Beach St., cor. E. Susquehanna Ave., Philda, Pa.
Bridgeport Chain Co., Bridgeport, Conn.
Buhl Malleable Iron Co., Detroit, Mich.
Dodge Manufacturing Co., Mishawaka, Ind.

THER, continued.

ey-Bennet Belting Co., 36 So. Canal St., Chicago, Ill.
n, Chas., Belting Co., 40 South Canal St., Chicago, Ill.
York Leather Belting Co., 8 Ferry St., New York.
ich Belt Mfg. Co., Norwich, Conn.
W. S., Co., Minneapolis, Minn.
Belting Co., Concord, N. H.
er, N., & Co., Bridgeport, Conn.
less Belting Co., Buffalo, N. Y.
nann, Geo., & Co., 31 Ferry St., New York.
lville, F., Grand Rapids, Mich.
ades, J. E., & Son, Wilmington, Del.
ieren, Chas. A., & Co., 45 Ferry St., New York.
s, S. R., Co., Minneapolis, Minn.
ith, James, & Co., 411 Race St., Philadelphia, Pa.
nner, Wm., Belting Co., Tolland, Conn.
y Belting & Supply Co., Troy, N. Y.
ner Leather Co., Norwich, Conn.
ion Belt Co., Fall River, Mass.
Illiams, I. B., & Son, Dover, N. H.
ise & Bailey, Front & Race Sts., Philadelphia, Pa.

awhide.

hicago Rawhide Manufacturing Co., 75 Ohio St., Chicago, Ill.
reson, Chas. L., 148 High St., Boston, Mass.
Kelton-Bruce Mfg. Co., 9 to 13 Franklin St., Salem, Mass.
Shultz Belting Co., St. Louis, Mo.
Western Rawhide & Belting Co., Milwaukee, Wis.
Williams, I. B., & Son, Dover, N. H.

Rubber.

Akron Belting Co., Akron, O.
Bartlett, C. O., & Snow Co., Cleveland, Ohio.
Boston Belting Co., 256 Devonshire St., Boston, Mass.
Cleveland Rubber Works, Cleveland, O.
Combination Rubber & Belting Co., Bloomfield, N. J.
Crescent Belting & Packing Co., Trenton, N. J.
Diamond Rubber Co., Akron, O.
Empire Rubber Mfg. Co., Trenton, N. J.
Goodrich, B. F., Co., Akron, O.
Goodyear Rubber Co., 787 Broadway, New York.
Gutta Percha & Rubber Manufacturing Co., 126 Duane St., N. Y.
Hamilton Rubber Mfg. Co., Trenton, N. J.
Home Rubber Co., Trenton, N. J.
Ireson, Chas. L., 148 High St., Boston, Mass.
Jeffrey Mfg. Co., Columbus, O.
Lake Shore Rubber Co., Erie, Pa.
Manhattan Rubber Mfg. Co., 18 Vesey St., New York.
Mechanical Rubber Co., 230 Randolph St., Chicago, Ill.
Mineralized Rubber Co., Inc., 18 Cliff St., New York.
New York Belting & Packing Co., 25 Park Place, New York.
New York Rubber Co., 84 Reade St., New York.
Peerless Rubber Mfg. Co., 16 Warren St., New York. *See adv. page 8.*
Pennsylvania Rubber Co., Jeannette, Pa.
Republic Rubber Co., Youngstown, O.
Quaker City Rubber Co., 409 Market St., Philadelphia, Pa.
Revere Rubber Co., 77 Bedford St., Boston, Mass.

BELTING, RUBBER, continued.

Robins Conveying Belt Co., Park Row Building, New York.
Stilwell-Bierce & Smith-Vaile Co., Dayton, O.
Stokes Rubber Co., Trenton, N. J.
Sumner, Wm., Belting Co., Tolland, Conn.
Trenton Rubber Manufacturing Co., Trenton, N. J.
Union Belt Co., Fall River, Mass.
United & Globe Rubber Manufacturing Co., Trenton, N. J.
Voorhees Rubber Manufacturing Co., Jersey City, N. J.
Waterbury Rubber Mfg. Co., 49 Warren St., New York.
Whitehead Bros. Rubber Co., Trenton, N. J.

174 **BELT CARRIERS.** Pulleys for supporting a long belt between the driving and the driven pulleys.

Abele, Chris., 537 W. 50th St., New York.
Aultman Co., Canton, O.
Borden & Selleck Co., 48 Lake St., Chicago, Ill.
Boston Belting Co., 256 Devonshire St., Boston, Mass.
Cresson, Geo. V., Co., Allegheny Ave., W. of 17th St., Philda, Pa.
Dodge Manufacturing Co., Mishawaka, Ind.
Falls Rivet & Machine Co., Cuyahoga Falls, O.
Garry Iron & Steel Co., Cleveland, O.
Hunter, James, Machine Co., North Adams, Mass.
Jeffrey Manufacturing Co., Columbus, O.
Jones & Laughlin Steel Co., Pittsburg, Pa.
Kilburn, Lincoln & Co., Fall River, Mass.
Klein, Chas. C., Marshall & Cambria Sts., Philadelphia, Pa.
Lane & Bodley Co., Cincinnati, O.
Link Belt Engineering Co., Nicetown, Philadelphia, Pa.
Minneapolis Steel & Machinery Co., 2854 Minnehaha Ave., Minneapolis, Minn.
Quaker City Rubber Co., 409 Market St., Philadelphia, Pa.
Smith, Jas., Woolen Machinery Co., 411 Race St., Philda, Pa.
Wood's, T. B., Sons, Chambersburg, Pa.

175 **BELT DRESSING.** Preparations for preserving belting and increasing its clinging properties.

Allen, W. D., Manufacturing Co., 151 Lake St., Chicago, Ill.
American Oil Co., Providence, R. I.
Anchor Belt Grease Manufacturing Co., Mechanicsburg, Pa.
Barnum Bros. Co., Troy, N. Y.
Belden, A. G., & Co., 145 Maiden Lane, New York.
Buffalo Specialty Manufacturing Co., Buffalo, N. Y.
Cling Surface Co., Buffalo, N. Y. *See adv. page 1.*
Dixon, Jos., Crucible Co., Jersey City, N. J.
Eagle Oil & Supply Co., 104 Broad St., Boston, Mass.
Fayerweather & Ladew, Inc., 91 Liberty St., New York.
Goodyear Rubber Hose & Packing Co., 221 Chestnut St., Philda.
Hendee Wire Brush Co., Milwaukee, Wis.
Imperial Leather Preserver Manufacturing Co., 212 South 3rd St., Philadelphia, Pa.
Jewell Belting Co., Hartford, Conn.
Keystone Lubricating Co., 20th St.., cor. Allegheny Ave., Philda.
Leather Preserver Mfg. Corporation, 21 Monroe St., Chicago, Ill.
Montgomery Bros., 48 North Front St., Philadelphia, Pa.
Munson, Chas., Belting Co., 40 South Canal St., Chicago, Ill.
New York Leather Belting Co., 8 Ferry St., New York.

BELT DRESSING, continued.

Palmer, N., & Co., Bridgeport, Conn.
Peerless Lubricant Mfg. Co., 29 West St., New York.
Pennsylvania Carbon-Graphite Co., Scranton, Pa.
Pittsburg Gage & Supply Co., Pittsburg, Pa.
Post, E. L., & Co., 50 Cliff St., New York.
Quaker City Rubber Co., 409 Market St., Philadelphia, Pa.
Rhoades, J. E., & Son, Wilmington, Del.
Robins Conveying Belt Co., Park Row Bldg., New York.
Schieren, Chas. A., & Co., 45 Ferry St., New York.
Schoonmaker, A., & Co., 29 West St., New York.
Sellers, Wm., & Co., Inc., 1600 Hamilton St., Philadelphia, Pa.
Southwick, Geo. W., & Co., 149 Centre St., New York.
Stephenson Manufacturing Co., Albany, N. Y.
Watt's, John M., Sons, 123 S. 2d St., Philadelphia, Pa.
Weller Mfg. Co., 118 North Ave., Chicago, Ill.

176 **BELT FASTENERS.** For joining the ends of belts.

Bristol Co., Waterbury, Conn.
Buffalo Specialty Mfg. Co., Buffalo, N. Y.
Covel Mfg. Co., 8-10 South Canal St., Chicago, Ill.
Crescent Steel Co., Pittsburg, Pa.
Fayerweather & Ladew, Inc., 91 Liberty St., New York.
Gilmer, L. H., & Co., 3952 Market St., Philadelphia, Pa.
Greene, Tweed & Co., 17 Murray St., New York.
Hartman Hide & Leather Co., St. Louis, Mo.
Jewell Belting Co., Hartford, Conn.
Kelley Bros. & Spielman, Swanson, cor. Moore St., Philda, Pa.
Quaker City Rubber Co., 409 Market St., Philadelphia, Pa.
Robins Conveying Belt Co., Park Row Bldg., New York.
Sawyer Hardware & Supply Co., Pawtucket, R. I.
Southwick, Geo., & Co., 149 Centre St., New York.
Talcot, W. O., Providence, R. I.
Thacher Belting Hook Co., 245 Crawford Rd., Cleveland, O.
Webb Hinge Belt Hook Co., Boonton, N. J.

177 **BELT LACING MACHINES.** Machines for joining belts.

Diamond Drill & Machine Co., Birdsboro, Pa. *See adv. page 20.*
Peerless Belt Lacing Machine Co., Swanson & Moore Sts., Philadelphia, Pa. *See adv. page 24.*
Quaker City Rubber Co., 409 Market St., Philadelphia, Pa.

178 **BELT TIGHTENERS.** Loose pulleys for taking up the slack of belts.

Abele, Chris., 537 W. 50th St., New York.
American Tool & Machine Co., 109 Beach St., Boston, Mass.
Brown, A. & F., Co., 25 Dey St., New York.
Cresson, Geo. V., Co., Allegheny Ave., W. of 17th St., Philda, Pa.
Diamond Iron Works, Minneapolis, Minn.
Dodge Mfg. Co., Mishawaka, Ind.
Fischer Machine Works, 345 So. Canal St., Chicago, Ill.
Goldens Foundry & Machine Co., Columbus, Ga.
Hill Clutch Co., Cleveland, O.
Howard Iron Works, Buffalo, N. Y.
Hunt, Rodney Machine Co., Orange, Mass.
Hunter, James, Machine Co., North Adams, Mass.

BELT TIGHTENERS, continued.

Jeffrey Mfg. Co., Columbus, O.
Jones & Laughlin Steel Co., Pittsburg, Pa.
Kaestner, Chas., & Co., 241 So. Jefferson St., Chicago, Ill.
Lane & Bodley Co., Cincinnati, O.
Link-Belt Machinery Co., 39th St. and Stewart Ave., Chicago.
McMurray, C. F., Co., Troy, N. Y.
Medart Patent Pulley Co., St. Louis, Mo.
Minneapolis Steel & Machinery Co., 2854 Minnehaha Ave., Minneapolis, Minn.
Norwalk Iron Works, South Norwalk, Conn. *See adv. page 14.*
Poole Engineering & Machine Co., Baltimore, Md.
Quincy Engine Works, Quincy, Ill.
Robins Conveying Belt Co., Park Row Bldg., New York.
Sellers, Wm., & Co., Inc., 1600 Hamilton st., Philadelphia, Pa.
Stilwell-Bierce & Smith-Vaile Co., Dayton, O.
Strait, H. N., Mfg. Co., Kansas City, Kan.
Townsend Furnace & Machine Co., Albany, N .Y.
Weller Mfg. Co., 118 North Ave., Chicago, Ill.
Williamsport Clutch & Pulley Co., Williamsport, Pa.
Wood's, T. B., Sons, Chambersburg, Pa.

179 **BUSHINGS.** Tubes or annuli for reducing the diameter of holes in pulleys, etc.

Abele, Chris., 537 W. 50th St., New York.
Boston Brass Co., 36 Oliver St., Boston, Mass.
Boston & Lockport Block Co., 160 Commercial St., Boston, Mass.
Case Mfg. Co., Columbus, Ohio.
Cresson, Geo. V., Co., Allegheny Ave., W. of 17th St., Philda, Pa.
Dodge Mfg. Co., Mishawaka, Ind.
Falls Rivet & Machine Co., Cuyahoga Falls, O.
Graphite Lubricating Co., Bound Brook, N. J.
Hill Clutch Co., Cleveland, O.
Hunter, James, Machine Co., North Adams, Mass.
Minneapolis Steel & Machinery Co., 2854 Minnehaha Ave., Minneapolis, Minn.
Moore & White Co., 15th St. and Lehigh Ave., Philda, Pa.
Perkins, B. F., & Son, Holyoke, Mass. *See adv. page 24.*
Pittsburg Pulley Co., Pittsburg, Pa.
Robins Conveying Belt Co., Park Row Bldg., New York.
Strait, H. N., Mfg. Co., Kansas City, Kan.
Walworth Mfg. Co., 134 Federal St., Boston, Mass.

180 **CLUTCHES.** Devices operating by friction or interlocking, for securing or breaking rotating continuity as between shafts, or a pulley and a shaft.

181 **Friction.** Adapted to transmitting motion by frictional contact and to be engaged and disengaged when machinery is in motion.

Abele, Chris., 537 W. 50th St., New York.
Allis-Chalmers Co., New York Life Bldg., Chicago, Ill.
American Tool & Machine Co., 109 Beach St., Boston, Mass.
Bartlett, C. O., & Snow Co., Cleveland, Ohio.
Benedict Mfg. Co., 7 Rochester St., Salamanca, N. Y.
Brown, A. & F., Co., 25 Dey St., New York.

CLUTCHES, FRICTION, continued

Byers, John F., Machine Co., Ravenna, O.
Carruthers-Fithian Clutch Co., Grove City, Pa.
Cresson, Geo. V., Co., Allegheny Ave., W. of 17th St., Philda, Pa.
Diamond Iron Works, Minneapolis, Minn.
Dodge Mfg. Co., Mishawaka, Ind.
Eastern Machinery Co., New Haven, Conn.
Falls Rivet & Machine Co., Cuyahoga Falls, O.
Greenwald, I. & E., Co., 720 E. Pearl St., Cincinnati, O.
Hess-Snyder Co . Massillon, O.
Hill Clutch Co., Cleveland, O.
Hopkins Machine Works, Bridgeton, R. I.
Howard Iron Works, Buffalo, N. Y.
Hunter, James, Machine Co., North Adams, Mass.
Jeffrey Mfg. Co., Columbus, O.
Johnson Carlyle Machine Co., Hartford, Conn.
Jones & Laughlin Steel Co., Pittsburg, Pa.
Kaestner, Chas., & Co., 241 So. Jefferson St., Chicago, Ill.
Klein, Chas. C., Marshall & Cambria Sts., Philadelphia, Pa.
Lane & Bodley Co., Cincinnati, O.
Link-Belt Engineering Co., Nicetown, Philadelphia, Pa.
Link-Belt Machinery Co., 39th St. and Stewart Ave., Chicago.
McMahon & Co., Worcester, Mass.
McMurray, C. F., Co., Troy, N. Y.
Medart Patent Pulley Co., St. Louis, Mo.
Minneapolis Steel & Machinery Co., 2854 Minnehaha Ave., Minneapolis, Minn.
Moore & White Co., 15th St. and Lehigh Ave., Philadelphia, Pa.
Oesterlein Mche. Co., Cincinnati, O.
Poole Engineering & Machine Co., Baltimore, Md.
Reeves Pulley Co., Columbus, Ind.
Robins Conveying Belt Co., Park Row Bldg., New York.
Sellers, Wm., & Co., Inc., 1600 Hamilton St., Philadelhpia, Pa.
Sinclair-Scott Co., Baltimore, Md.
Smith, F. R., Franklin Falls, N. H.
Smith, James, Woolen Mchy. Co., 411 Race St., Philadelphia, Pa.
Stilwell-Bierce & Smith-Vaile Co., Dayton, O.
Strait, H. N., Mfg. Co., Kansas City, Kan.
Townsend Furnace & Machine Shop, Albany, N. Y.
Weller Mfg. Co., 118 North Ave., Chicago, Ill.
Wellman-Seaver-Morgan Co., Cleveland, Ohio.
Williamsport Clutch & Pulley Co., Williamsport, Pa.
Wood's, T. B., Sons, Chambersburg, Pa.

182 **Safety Three Part.** Made in three pieces, two of which are keyed firmly to the ends of the shaft to be connected; the third piece slides over and connects the other two.
Falls Rivet & Machine Co., Cuyahoga Falls, O.
Jones, E. D., & Sons Co., Pittsfield, Mass.
Minneapolis Steel & Machinery Co., 2854 Minnehaha Ave., Minneapolis, Minn.

183 **Wood Split Pulley.** Adapted for use with wood split pulleys. See 227, Wood Split Pulleys.

184 **CLUTCH SHIFTING MECHANISM.** For locking and unlocking friction clutches.

Borden & Selleck Co., 48 Lake St., Chicago, Ill.

CLUTCH SHIFTING MECHANISM, continued.

Brown, A. & F., Co., 25 Dey St., New York.
Cresson, Geo. V., Co., Allegheny Ave., W. of 17th St., Philda, Pa.
Klein, Chas. C., Marshall & Cambria Sts., Philda, Pa.
Lane & Bodley Co., Cincinnati, O.
Moore & White Co., 15th St. & Lehigh Ave., Philadalphia, Pa.
Robins Conveying Belt Co., Park Row Bldg., New York.

185 **COLLARS.** Rings for holding shafting or loose pulleys in proper position.

186 **Plain Set.** Having set screws for clamping.

Abele, Chris., 537 W. 50th St., New York.
Bartlett, C. O., & Snow Co., Cleveland, Ohio.
Brown, A. & F., Co., 25 Dey St., New York.
Cresson, Geo. V., Co., Allegheny Ave., W. of 17th St., Philda, Pa.
Cumberland Steel Co., Cumberland, Md.
Dodge Mfg. Co., Mishawaka, Ind.
Falls Rivet & Machine Co., Cuyahoga Falls, O.
Greenwald, I. & E. Co., 720 E. Pearl St., Cincinnati, O.
Howard Iron Works, Buffalo, N. Y.
Hunter, James, Machine Co., North Adams, Mass.
Jeffrey Mfg. Co., Columbus, O.
Kaestner, Chas., & Co., 241 So. Jefferson St., Chicago, Ill.
Kelly Foundry & Machine Co., Goshen, Ind.
Klein, Chas. C., Marshall & Cambria Sts., Philadelphia, Pa.
Lane & Bodley Co., Cincinnati, O.
Link-Belt Engineering Co., Nicetown, Philadelphia, Pa.
Medart Patent Pulley Co., St. Louis, Mo.
Minneapolis Steel & Machinery Co., 2854 Minnehaha Ave., Minneapolis, Minn.
Moore & White Co., 15th St. & Lehigh Ave., Philadelphia, Pa.
Oneida Steel Pulley Co., Oneida, N. Y.
Poole Engineering & Machine Co., Baltimore, Md.
Robins Conveying Belt Co., Park Row Bldg., New York.
Stilwell-Bierce & Smith-Vaile Co., Dayton, O.
Strait, H. N., Mfg. Co., Kansas City, Kan.
Weller Mfg. Co., 118 North Ave., Chicago, Ill.

187 **Safety Set.** Provided with a clamping device which does not project beyond the collar.

Bartlett, C. O., & Snow Co., Cleveland, Ohio.
Brown, A. & F., Co., 25 Dey St., New York.
Cresson, Geo. V., Co., Allegheny Ave., W. of 17th St., Philda, Pa.
Cumberland Steel Co., Cumberland, Md.
Dodge Mfg. Co., Mishawaka, Ind.
Eastern Machinery Co., New Haven, Conn.
Falls Rivet & Machine Co., Cuyahoga Falls, O.
Goldens Foundry & Machinery Co., Cuyahoga Falls, O.
Greenwald, I. & E., Co., 720 E. Pearl St., Cincinnati, O.
Jones & Laughlin Steel Co., Pittsburg, Pa.
Klein, Chas. C., Marshall & Cambria Sts., Philadelphia, Pa.
Lane & Bodley Co., Cincinnati, O.
Link-Belt Engineering Co., Nicetown, Philadelphia, Pa.
Medart Patent Pulley Co., St. Louis, Mo.
Minneapolis Steel & Machinery Co., 2854 Minnehaha Ave., Minneapolis, Minn.

COLLARS, SAFETY SET, continued.

Moore & White Co., 15th St. & Lehigh Ave., Philadelphia, Pa.
Perkins, B. F., & Son, Holyoke, Mass. *See adv. page 24.*
Sellers, Wm., & Co., Inc., 1600 Hamilton St., Philadelphia, Pa.
Strait, H. N., Mfg. Co., Kansas City, Kan.
Weller Mfg. Co., 118 North Ave., Chicago, Ill.
Williamsport Clutch & Pulley Co., Williamsport, Pa.
Wood's, T. B., Sons, Chambersburg, Pa.

188 **CORDAGE.** See 228, Rope.

189 **COUNTERSHAFTS.** Short shafts carrying tight and loose pulleys or clutches, for starting or stopping machines by means of a shifting lever.

Abele, Chris., 537 W. 50th St., New York.
American Tool & Machine Co., 109 Beach St., Boston, Mass.
Brown, A. & F., Co., 25 Dey St., New York.
Cresson, Geo. V., Co., Allegheny Ave., W. of 17th St., Philda, Pa.
Dodge Mfg. Co., Mishawaka, Ind.
Goulds Mfg. Co., Seneca Falls, N. Y.
Greenwald, I. & E., Co., 720 E. Pearl St., Cincinnati, O.
Howard Iron Works, Buffalo, N. Y.
Hunter, James, Machine Co., North Adams, Mass.
Kaestner, Chas., & Co., 241 So. Jefferson St., Chicago, Ill.
Klein, Chas. C., Marshall & Cambria Sts., Philadelphia, Pa.
Lane & Bodley Co., Cincinnati, O.
Liddell Co., Charlotte, N. C.
Medart Patent Pulley Co., St. Louis, Mo.
Minneapolis Steel & Machinery Co., 2854 Minnehaha Ave., Minneapolis, Minn.
Moore & White Co., 15th St. & Lehigh Ave., Philadelphia, Pa.
Oesterlein Mche. Co., Cincinnati, O.
Reeves Pulley Co., Columbus, Ind.
Robins Conveying Belt Co., Park Row Bldg, New York.
Ross, Josiah, Buffalo, N. Y.
Sellers, Wm., & Co., Inc., 1600 Hamilton St., Philadelphia, Pa.
Speed Changing Pulley Co., Indianapolis, Ind.
Strait, H. N., Mfg. Co., Kansas City, Kan.
Weller Mfg. Co., 118 North Ave., Chicago, Ill.
Wheaton Machine Co., 368 Congress St., Boston, Mass.
White, John A., Co., Dover, N. H.
Wilmarth & Morman Co., Grand Rapids, Mich.
Williamsport Clutch & Pulley Co., Williamsport, Pa.
Woods's, T. B., Sons, Chambersburg, Pa.

190 **COUPLINGS.** Devices for securing together the ends of shafts.

191 **Clamp.** Shaft couplings in which the shafts are clamped by transverse bolts.

Abele, Chris., 537 West 50th St., New York.
Allis-Chalmers Co., New York Life Bldg., Chicago, Ill.
Almond, T. R., 83 Washington St., Brooklyn, N. Y.
American Tool & Machine Co., 109 Beach St., Boston, Mass.
Brown, A. & F., Co., 25 Dey St., New York.
Cresson, Geo. V., Co., Allegheny Ave., W. of 17th St., Philda, Pa.
Dodge Mfg. Co., Mishawaka, Ind.
Falls Rivet & Machine Co., Cuyahoga Falls, O.
Goldens Foundry & Machine Co., Columbus, Ga.

COUPLINGS, CLAMP, continued.

Greenwald, I. & E., Co., 720 E. Pearl St., Cincinnati, O.
Howard Iron Works, Buffalo, N. Y.
Jones & Laughlin Steel Co., Pittsburg, Pa.
Klein, Chas. C., Marshall & Cambria Sts., Philadelphia, Pa.
Lane & Bodley Co., Cincinnati, O.
Medart Patent Pulley Co., St. Louis, Mo.
Minneapolis Steel & Machinery Co., 2854 Minnehaha Ave., Minneapolis, Minn.
Moore & White Co., 15th St. & Lehigh Ave., Philadelphia, Pa.
Oneida Steel Pulley Co., Oneida, N. Y.
Poole Engineering & Machine Co., Baltimore, Md.
Sellers, Wm., & Co., Inc., 1600 Hamilton St., Philadelphia, Pa.
Strait, H. N., Mfg. Co., Kansas City, Kan.
Valley Iron Works, Williamsport, Pa.
Wood's, T. B., Sons, Chambersburg, Pa.

192 **Compression.** That grip the shafts by means of tapered parts forced against the shafts by longitudinal pressure.

Allis-Chalmers Co., New York Life Bldg., Chicago, Ill.
American Tool & Machine Co., 109 Beach St., Boston, Mass.
Bartlett, C. O., & Snow Co., Cleveland, Ohio.
Brown, A. & F., Co., 25 Dey St., New York.
Cresson, Geo. V., Co., Allegheny Ave., W. of 17th St., Philda, Pa.
Dodge Mfg. Co., Mishawaka, Ind.
Falls Rivet & Machine Co., Cuyahoga Falls, Ohio.
Goldens Foundry & Machine Co., Columbus, Ga.
Greenwald, I. & E., Co., 720 E. Pearl St., Cincinnati, O.
Hunt, Rodney, Machine Co., Orange, Mass.
Hunter, James, Machine Co., North Adams, Mass.
Jeffrey Mfg. Co., Columbus, O.
Jones & Laughlin Steel Co., Pittsburg, Pa.
Kaestner, Chas. & Co., 241 So. Jefferson St., Chicago, Ill.
Lane & Bodley Co., Cincinnati, O.
Liddell Co., Charlotte, N. C.
Link-Belt Machinery Co., 39th St. and Stewart Ave., Chicago.
Medart Patent Pulley Co., St. Louis, Mo.
Minneapolis Steel & Machinery Co., 2854 Minnehaha Ave., Minneapolis, Minn.
Moore & White Co., 15th St. & Lehigh Ave., Philadelphia, Pa.
Oneida Steel Pulley Co., Oneida, N. Y.
Perkins, B. F., & Son, Holyoke, Mass.
Poole Engineering & Machine Co., Baltimore, Md.
Sellers, Wm., & Co., Inc., 1600 Hamilton St., Philadelphia, Pa.
Shaw Coupling Co., Syracuse, N. Y.
Valley Iron Works, Williamsport, Pa.
Weller Mfg. Co., 118 North Ave., Chicago, Ill.
White, John A., Co., Dover, N. H.
Williamsport Clutch & Pulley Co., Williamsport, Pa.
Wood's, T. B., Sons, Chambersburg, Pa.

193 **Flanged or Plate.** Consisting of flanges keyed to the shafts and bolted together.

Abele, Chris., 537 West 50th St., New York.
Allis-Chalmers Co., New York Life Bldg., Chicago, Ill.
American Tool & Machine Co., 109 Beach St., Boston, Mass.
Bartlett, C. O., & Snow Co., Cleveland, Ohio.

COUPLINGS, FLANGED OR PLATE, continued.

Brown, A. & F., Co., 25 Dey St., New York.
Cresson, Geo. V., Co., Allegheny Ave., W. of 17th St., Philda, Pa.
Cumberland Steel Co., Cumberland, Md.
Diamond Iron Works, Minneapolis, Minn.
Dodge Mfg. Co., Mishawaka, Ind.
Fairbanks Co., Broome and Elm Sts., New York.
Falls Rivet & Machine Co., Cuyahoga Falls, O.
Goldens Foundry & Machine Co., Columbus, Ga.
Greenwald, I. & E., Co., 720 E. Pearl St., Cincinnati, O.
Hess-Snyder Co., Massillon, O.
Howard Iron Works, Buffalo, N. Y.
Hunter, James, Machine Co., North Adams, Mass.
Jefferson Mfg. Co., Lexington, Mass.
Jeffrey Mfg. Co., Columbus, O.
Jones, E. D., & Sons Co., Pittsfield, Mass.
Jones & Laughlin Steel Co.; Pittsburg, Pa.
Kaestner, Chas., & Co., 241 So. Jefferson St., Chicago, Ill.
Kelly Foundry & Machine Co., Goshen, Ind.
Klein, Chas. C., Marshall & Cambria Sts., Philadelphia, Pa.
Lane & Bodley Co., Cincinnati, O.
Liddell Co., Charlotte, N. C.
Link-Belt Machinery Co., 39th St., and Stewart Ave., Chicago.
Medart Patent Pulley Co., St. Louis, Mo.
Minneapolis Steel & Machinery Co., 2854 Minnehaha Ave., Minneapolis, Minn.
Moore & White Co., 15th St. & Lehigh Ave., Philadelphia, Pa.
Oneida Steel Pulley Co., Oneida, N. Y.
Poole Engineering & Machine Co., Baltimore, Md.
Sellers, Wm., & Co., Inc., 1600 Hamilton St., Philadelphia, Pa.
Smith, James, Woolen Machinery Co., 411 Race St., Philda, Pa.
Stilwell-Bierce & Smith-Vaile Co., Dayton, O.
Strait, H. N., Mfg. Co., Kansas City, Kan.
Townsend Furnace & Machine Shop, Albany, N. Y.
Valley Iron Works, Williamsport, Pa.
Weller Mfg. Co., 118 North Ave., Chicago, Ill.
White, John A., Co., Dover, N. H.
Williamsport Clutch & Pulley Co., Williamsport, Pa.
Wood's, T. B., Sons, Chambersburg, Pa.

194 **Friction.** Shaft couplings driven by frictional contact.

Allis-Chalmers Co., New York Life Bldg., Chicago, Ill.
American Tool & Machine Co., 109 Beach St., Boston, Mass.
American Twist Drill Co., Laconia, N. H.
Brown, A. & F., Co., 25 Dey St., New York.
Cresson, Geo. V., Co., Allegheny Ave., W. of 17th St., Philda, Pa.
Diamond Iron Works, Minneapolis, Minn.
Dodge Mfg. Co., Mishawaka, Ind.
Eastern Machinery Co., New Haven, Conn.
Falls Rivet & Machine Co., Cuyahoga Falls, O.
Goldens Foundry & Machine Co., Columbus, Ga.
Greenwald, I. & E., Co., 720 E. Pearl St., Cincinnati, O.
Hess-Snyder Co., Massillon, O.
Hill Clutch Co., Cleveland, O.
Hodgson, E. A., Laconia, N. H.
Hopkins Machine Works, Bridgeton, R. I.
Howard Iron Works, Buffalo, N. Y.
Hunter, James, Machine Co., North Adams, Mass.

COUPLINGS, FRICTION, continued

Jeffrey Mfg. Co., Columbus, O.
Jones & Laughlin Steel Co., Pittsburg, Pa.
Klein, Chas. C., Marshall & Cambria Sts., Philadelphia, Pa.
Lane & Bodley Co., Cincinnati, O.
Link-Belt Machinery Co., 39th St. and Stewart Ave., Chicago.
McMurray, C. F., Co., Troy, N. Y.
Mason, Volney W., & Co., Providence, R. I.
Medart Patent Pulley Co., St. Louis, Mo.
Minneapolis Steel & Machinery Co., 2854 Minnehaha Ave., Minneapolis, Minn.
Moore & White Co., 15th St. and Lehigh Ave., Philadelphia, Pa.
Sellers, Wm., & Co., Inc., 1600 Hamilton St., Philadelphia, Pa.
Smith, S., Morgan Co., York, Pa.
Smith, Jas., Woolen Machinery Co., 411 Race St., Philda, Pa.
Stilwell-Bierce & Smith-Vaile Co., Dayton, O.
Strait, H. N. Mfg. Co., Kansas City, Kan.
Townsend Furnace & Machine Shop, Albany, N. Y.
White, John A., Co., Dover, N. H.
Willamette Iron & Steel Works, Portland, Ore.
Williamsport Clutch & Pulley Co., Williamsport, Pa.
Wood's, T. B., Sons, Chambersburg, Pa.

195 **Jaw or Clutch.** Positively engaged by jaws or projections on the face of the opposite parts.

Abele, Chris., 537 W. 50th St., New York.
Allis-Chalmers Co., New York Life Bldg., Chicago, Ill.
American Tool & Machine Co., 109 Beach St., Boston, Mass.
Bartlett, C. O., & Snow Co., Cleveland, Ohio.
Brown, A. & F., Co., 25 Dey St., New Work.
Cresson, Geo. V., Co., Allegheny Ave., W. of 17th St., Philda, Pa.
Dodge Mfg. Co., Mishawaka, Ind.
Falls Rivet & Machine Co., Guyahoga Falls, O.
Goldens Foundry & Machine Co., Columbus, Ga.
Greenwald, I. & E. Co., 720 E. Pearl St., Cincinnati, O. *See adv. page* ‡.
Howard Iron Works, Buffalo, N. Y.
Hunter, James, Machine Co., North Adams, Mass.
Jeffrey Mfg. Co., Columbus, O.
Jones & Laughlin Steel Co., Pittsburg, Pa.
Kaestner, Chas., & Co., 241 So. Jefferson St., Chicago, Ill.
Klein, Chas. C., Marshall & Cambria Sts., Philadelphia, Pa.
Lane & Bodley Co., Cincinnati, O.
Liddell Co., Charlotte, N. C.
Link-Belt Engineering Co., Nicetown, Philadelphia, Pa.
Medart Patent Pulley Co., St. Louis, Mo.
Moore & White Co., 15th St. & Lehigh Ave., Philadelphia, Pa.
Poole Engineering & Machine Co., Baltimore, Md.
Sellers, Wm., & Co., Inc., 1600 Hamilton St., Philadelphia, Pa.
Smith, Jas., Woolen Machinery Co., 411 Race St., Philadelphia.
Strait, H. N., Mfg. Co., Kansas City, Kan.
Wood's, T. B., Sons, Chambersburg, Pa.

196 **Sleeve.** See 202, Wedge Couplings.

Brown, A. & F., Co., 25 Dey St., New York.
Cresson, Geo. V., Co., Allegheny Ave., W. of 17th St., Philda, Pa.
Dodge Mfg. Co., Mishawaka, Ind.

COUPLINGS, SLEEVE, continued

Goldens Foundry & Machine Co., Columbus, Ga.
Greenwald, I. & E., Co., 720 E. Pearl St., Cincinnati, Ohio. *See adv. page 4.*
Kaestner, Chas., & Co., 241 So. Jefferson St., Chicago, Ill.
Klein, Chas C., Marshall & Cambria Sts., Philadelphia, Pa.
Lane & Bodley Co., Cincinnati, O.
Link-Belt Engineering Co., Nicetown, Philadelphia, Pa.
Moore & White Co., 15th St. & Lehigh Ave., Philadelphia, Pa.
Wood's, T. B., Sons, Chambersburg, Pa.

197 **Spiral Jaw.** Operated by jaws which intermesh spirally.

Allis-Chalmers Co., New York Life Bldg., Chicago, Ill.
Bartlett, C. O., & Snow Co., Cleveland, Ohio.
Brown, A. & F., Co., 25 Dey St., New York.
Cresson, Geo. V., Co., Allegheny Ave., W. of 17th St., Philda. Pa.
Dodge Mfg. Co., Mishawaka, Ind.
Greenwald, I. & E., Co., 720 E. Pearl St., Cincinnati, O.
Jeffrey Mfg. Co., Columbus, O.
Kaestner, Chas., & Co., 241 So. Jefferson St., Chicago, Ill.
Link-Belt Engineering Co., Nicetown, Philadelphia, Pa.
Link-Belt Machinery Co., 39th St. & Stewart Ave., Chicago, Ill.
Minneapolis Steel & Machinery Co., 2854 Minnehaha Ave., Minneapolis, Minn.
Moore & White Co., 15th St. & Lehigh Ave., Philadelphia, Pa.
Strait, H. N., Mfg. Co., Kansas City, Kan.
Weller Mfg. Co., 118 North Ave., Chicago, Ill.
Williamsport Clutch & Pulley Co., Williamsport, Pa.
Wood's, T. B., Sons, Chambersburg, Pa.

198 **Square Jaw.** Operated by jaws which intermesh squarely.

Abele, Chris., 537 W. 50th St., New York.
Bartlett, C. O., & Snow Co., Cleveland, Ohio.
Borden & Selleck Co., 48 Lake St., Chicago, Ill.
Brown, A. & F., Co., 25 Dey St., New York.
Cresson, Geo V., Co., Allegheny Ave., W. of 17th St., Philda. Pa.
Dodge Mfg. Co., Mishawaka, Ind.
Falls Rivet & Machine Co., Cuyahoga Falls, O.
Goldens Foundry & Machine Co., Columbus, Ga.
Greenwald, I. & E., Co., 720 E. Pearl St., Cincinnati, O.
Lane & Bodley Co., Cincinnati, O.
Kaestner, Chas., & Co., 241 So. Jefferson St., Chicago, Ill.
Klein, Chas. C., Marshall & Cambria Ets., Philadelphia, Pa.
Link-Belt Engineering Co., Nicetown, Philadelphia, Pa.
Link-Belt Machinery Co., 39th St. and Stewart Ave., Chicago.
Minneapolis Steel & Machinery Co., 2854 Minnehaha Ave., Minneapolis, Minn.
Moore & White Co., 15th St. & Lehigh Ave., Philadelphia, Pa.
Strait, H. N., Mfg. Co., Kansas City, Kan.
Williamsport Clutch & Pulley Co., Williamsport, Pa.
Wood's, T. B., Sons, Chambersburg, Pa.

199 **Universal Joint.** Flexible couplings for transmitting rotary motion through an angle.

Allis-Chalmers Co., New York Life Bldg., Chicago, Ill.
Brown, A. & F., Co., 25 Dey St., New York.

COUPLINGS, UNIVERSAL JOINT, continued.

Cresson, Geo. V., Co., Allegheny Ave., W. of 17th St., Philda, Pa.
Dodge Mfg. Co., Mishawaka, Ind.
Jones & Laughlin Steel Co., Pittsburg, Pa.
Kaestner, Chas., & Co., 241 So. Jefferson St., Chicago, Ill.
Klein, Chas. C., Marshall & Cambria Sts., Philadelphia, Pa.
Minneapolis Steel & Machinery Co., 2854 Minnehaha Ave., Minneapolis, Minn.

200 **Vise.** See 201, Wedge Couplings.

Hill Clutch Co., Cleveland, O.
Sellers, Wm. & Co., Inc., 1600 Hamilton St., Philadelphia, Pa.
Wood's, T. B., Sons, Chambersburg, Pa.

201 **Wedge.** Which clamp the shaft and are enclosed in a sleeve.

Stuart, R. J., New Hamburg, N. Y.

202 **DRIVING CHAINS.** For power transmission.

Bartlett, C. O., & Snow Co., Cleveland, Ohio.
Federal Mfg. Co., American Trust Bldg., Cleveland, O. *See adv. page 17.*
Link-Belt Machinery Co., 39th St. & Stewart Ave., Chicago, Ill.
Morse Chain Co., Trumansburg, N. Y. *See adv. page 19.*
Whitney Mfg. Co., Hartford, Conn.

203 **FLY WHEELS.** Heavy wheels for steadying the motion of machinery.

Bates Machine Co., Joliet, Ill.
Brown, A. & F., Co., 25 Dey St., New York.
Chase Pulley Co., Providence, R. I.
Cresson, Geo. V., Co., Allegheny Ave., W. of 17th St., Philda, Pa.
Dodge Mfg. Co., Mishawaka, Ind.
Falls Rivet & Machine Co., Cuyahoga Falls, O.
Goldens Foundry & Machine Co., Columbus, Ga.
Goodnow, L. H., Foundry Co., Fitchburg, Mass.
Greenwald, I. & E., Co., 720 E. Pearl St., Cincinnati, O.
Howard Iron Works, Buffalo, N. Y.
Jones & Laughlin Steel Co., Pittsburg, Pa.
Klein, Chas. C., Marshall & Cambria Sts., Philadelphia, Pa.
Lane & Bodley Co., Cincinnati, O.
Lehigh Foundry Co., Fullerton, Pa.
Medart Patent Pulley Co., St. Louis, Mo.
Minneapolis Steel & Machinery Co., 2854 Minnehaha Ave., Minneapolis, Minn.
Poole Engineering & Machine Co., Baltimore, Md.
Quincy Engine Works, Quincy, Ill.
Sellers, Wm., & Co., Inc., 1600 Hamilton St., Philadelphia, Pa.
Strait, H. N., Mfg. Co., Kansas City, Kan.
Stilwell-Bierce and Smith-Vaile Co., Dayton, O.
Townsend Furnace & Machine Shop, Albany, N. Y.
Vilter Mfg. Co., Milwaukee, Wis.
Williamsport Clutch & Pulley Co., Williamsport, Pa.
Wood's, T. B., Sons, Chambersburg, Pa.

204 **FRAMES OR BOXES, WALL.** See 166, Wall Brackets.

Abele, Chris., 537 W. 50th St., New York.
American Tool & Machine Co., 109 Beach St., Boston, Mass.

FRAMES OR BOXES, WALL, continued

Bartlett, C. O., & Snow Co., Cleveland, Ohio.
Brown, A. & F., Co., 25 Dey St., New York.
Cresson, Geo. V., Co., Allegheny Ave., W. of 17th St., Philda, Pa.
Dodge Mfg. Co., Mishawaka, Ind.
Eastwood, Benj., Co., Paterson, N. J.
Falls Rivet & Machine Co., Cuyahoga Falls, O.
Goldens Foundry & Machine Co., Columbus, Ga.
Hunter, James, Machine Co., North Adams, Mass.
Jeffrey Mfg. Co., Columbus, O.
Jones, E. D., & Sons Co., Pittsfield, Mass.
Jones & Laughlin Steel Co., Pittsburg, Pa.
Kaestner, Chas., & Co., 241 S. Jefferson St., Chicago, Ill.
Kilburn, Lincoln & Co., Fall River, Mass.
Klein, Chas. C., Marshall & Cambria Sts., Philadelphia, Pa.
Lane & Bodley Co., Cincinnati, O.
Link-Belt Machinery Co., 39th St. and Stewart Ave., Chicago.
Medart Patent Pulley Co., St. Louis, Mo.
Minneapolis Steel & Machinery Co., 2854 Minnehaha Ave., Minneapolis, Minn.
Moore & White Co., 15th St. & Lehigh Ave., Philadelphia, Pa.
Robins Conveying Belt Co., Park Row Bldg., New York.
Sellers, Wm., & Co., Inc., 1600 Hamilton St., Philadelphia, Pa.
Strait, H. N., Mfg. Co., Kansas City, Kan.
Williamsport Clutch & Pulley Co., Williamsport, Pa.
Wood's, T. B., Sons, Chambersburg, Pa.

205 GEARS. Toothed wheels for transmitting rotary motion.

Abele, Chris., 537 W. 50th St., New York.
Albro, Clem, Elevator Co., 7th & Glenwood Ave., Philda, Pa.
Allis-Chalmers Co., New York Life Bldg., Chicago, Ill.
Arthur Co., 188 Front St., New York.
Aultman Co., Canton, O.
Bartlett, C. O., & Snow Co., Cleveland, Ohio.
Bilgram Hugo, 440 No. 12th St., Philadelphia, Pa.
Blake, Geo. F., Mfg. Co., 114 Liberty St., New York.
Boston Gear Works, Purchase & Pearl Sts., Boston, Mass.
Brown, A. & F., Co., 25 Dey St., New York.
Borden & Selleck Co., 48 Lake St., Chicago, Ill.
Caldwell, H. W., & Son, Co., Chicago, Ill.
Chester Steel Castings Co., 407 Sansom St., Philadelphia, Pa.
Christiana Machine Co., Christiana, Pa.
Cleveland Gear Works, Cleveland, O.
Cresson, Geo. V., Co., Allegheny Ave., W. of 17th St., Philda, Pa.
Delaware Hard Fibre Co., Wilmington, Del.
Diamond Iron Works, Minneapolis, Minn.
Dodge Mfg. Co., Mishawaka, Ind.
Earle Gear & Machine Co., Oxford & Mascher Sts., Philda, Pa.
Fawcus Machine Co., Pittsburg, Pa.
Ganschow, William, 12 So. Clinton St., Chicago, Ill.
Gleason Works, Rochester, N. Y.
Grant Gear Works, 6 Portland St., Boston, Mass.
Greenwald, I. & E. Co., 720 E. Pearl St., Cincinnati, O. *See adv. page 4.*
Hill Clutch Co., Cleveland, O.
Hinds, Thos., Malone, N. Y.
Horsburgh & Scott, Cleveland, O.
Howard Iron Works, Buffalo, N. Y.

GEARS, continued

Hunt, Rodney, Machine Co., Orange, Mass.
James & Foote, 58 So. Canal St., Chicago, Ill.
Jeffrey Mfg. Co., Columbus, O.
Jones, E. D., & Sons Co., Pittsfield, Mass.
Kaestner, Chas., & Co., 241 So. Jefferson St., Chicago, Ill.
Klein, Chas. C., Marshall & Cambria Sts., Philadelphia, Pa.
Krumberger & Vreeland, 33 Sullivan St., New York.
Lane & Bodley Co., Cincinnati, O.
Link-Belt Engineering Co., Nicetown, Philadelphia, Pa.
Link-Belt Machinery Co., 39th St. and Stewart Ave., Chicago.
Mansfield Engineering Co., Mansfield, O.
Medart Patent Pulley Co., St. Louis, Mo.
Messmer, Ferdinand, Mfg. Co., 2702 So. 7th St., St. Louis, Mo.
Mesta Machine Co., Pittsburg, Pa.
Minneapolis Steel & Machinery Co., 2854 Minnehaha Ave., Minneapolis, Minn.
Moore & White Co., 15th St. & Lehigh Ave., Philadelphia, Pa.
Morse, Williams & Co., Philadelphia, Pa. *See adv. page 20.*
Mundy, J. S., 22 Prospect St., Newark, N. J.
National Gear Wheel & Foundry Co., Allegheny, Pa.
New Jersey Foundry & Machine Co., 9 Murray St., New York.
New Process Rawhide Co., Syracuse, N. Y.
Nuttall, R. D., Co., Pittsburg, Pa.
Philadelphia Gear Works, 7th & Cherry Sts., Philadelphia, Pa. *See adv. page 23.*
Poole Engineering & Machine Co., Baltimore, Md.
Sawyer Gear Works, 227 St. Clair St., Cleveland, O.
Schofield Gear & Pulley Co., Providence, R. I.
Sellers, Wm., & Co., Inc., 1600 Hamilton St., Philadelphia, Pa.
Simonds Mfg. Co., Pittsburg, Pa.
Smith, Jas. Woolen Machinery Co., 411 Race St., Philda, Pa.
Smith S. Morgan Co., York, Pa.
Stilwell-Bierce & Smith-Vaile Co., Dayton, O.
Stow Flexible Shaft Co., 26th and Callowhill Sts., Philda, Pa.
Strait, H. N., Mfg. Co., Kansas City, Kan.
Townsend Furnace & Machine Shop, Albany, N. Y.
Trebert, H. L. F., & Co., Rochester, N. Y.
Welch, T. F., & Co., 55 Sudbury St., Boston, Mass.
Weller Mfg. Co., 118 North Ave., Chicago, Ill.
Willamette Iron & Steel Works, Portland, Oregon.
Williamsport Clutch & Pulley Co., Williamsport, Pa.
Windsor Locks Machine Co., Windsor Locks, Conn.
Wood's, T. B., Sons, Chambersburg, Pa.

206 **Worm Wheel.** For engagement with worms.

Abele, Chris., 537 W. 50th St., New York.
Allis-Chalmers Co., New York Life Bldg., Chicago, Ill.
Bartlett, C. O., & Snow Co., Cleveland, Ohio.
Brown, A. & F., Co., 25 Dey St., New York.
Cresson, Geo. V., Co., Allegheny Ave., W. of 17th St., Philda, Pa.
Jeffrey Mfg. Co., Columbus, O.
Kaestner, Chas., & Co., 241 So. Jefferson St., Chicago, Ill.
Krumberger & Vreeland, 33 Sullivan St., New York.
Lane & Bodley Co., Cincinnati, O.
Link-Belt Engineering Co., Nicetown, Philadelphia, Pa.
Minneapolis Steel & Machinery Co., 2854 Minnehaha Ave., Minneapolis, Minn.

GEARS, WORM WHEEL, continued.

Moore & White Co., 15th St. & Lehigh Ave., Philadelphia, Pa.
National Gear Wheel & Foundry Co., Allegheny, Pa.
Poole Engineering & Machine Co., Baltimore, Md.
Strait, H. N., Mfg. Co., Kansas City, Kan.
Townsend Furnace & Machine Shop, Albany, N. Y.

207 **HANGERS.** Frames containing bearings for shafting.

208 **Ball and Socket, Adjustable.** Shaft hangers that are self-adjusting.

Abele, Chris., 537 West 50th St., New York.
Bantam Mfg. Co., Bantam, Conn.
Bartlett, C. O., & Snow Co., Cleveland, Ohio.
Brown, A. & F., Co., 25 Dey St., New York.
Cresson, Geo. V., Co., Allegheny Ave., W. of 17th St., Philda, Pa.
Dodge Mfg. Co., Mishawaka, Ind.
Eastwood, Benjamin, Co., Paterson, N. J.
Falls Rivet & Machine Co., Cuyahoga Falls, O.
Greenwald, I. & E., Co., 720 E. Pearl St., Cincinnati, O.
Howard Iron Works, Buffalo, N. Y.
Hunter, James, Machine Co., North Adams, Mass.
Jeffrey Mfg. Co., Columbus, O.
Jones, E. D., & Sons, Co., Pittsfield, Mass.
Jones & Laughlin Steel Co., Pittsburg, Pa.
Kaestner, Chas., & Co., 241 So. Jefferson St., Chicago, Ill.
Klein, Chas. C., Marshall & Cambria Sts., Philda, Pa.
Lane & Bodley Co., Cincinnati, O.
Link-Belt Engineering Co., Nicetown, Philadelphia, Pa.
Medart Patent Pulley Co., St. Louis, Mo.
Minneapolis Steel & Machinery Co., 2854 Minnehaha Ave., Minneapolis, Minn.
Moore & White Co., 15th St. & Lehigh Ave., Philadelphia, Pa.
Olney & Warrin, 36 Dey St., New York.
Oneida Steel Pulley Co., Oneida, N. Y.
Poole Engineering & Machine Co., Baltimore, Md.
Robins Conveying Belt Co., Park Row Bldg, New York.
Seelye Mfg. Co., 118 South St., Boston, Mass.
Sellers, Wm., & Co., Inc., 1600 Hamilton St., Philadelphia, Pa.
Smith, James, Woolen Mchy Co., 411 Race St., Philadelphia, Pa.
Stilwell-Bierce & Smith-Vaile Co., Dayton, O.
Strait, H. N., Mfg. Co., Kansas City, Kan.
Townsend Furnace & Machine Shop, Albany, N. Y.
Weller Mfg. Co., 118 North Ave., Chicago, Ill.
Williamette Iron & Steel Works, Portland, Oregon.
Williamsport Clutch & Pulley Co., Williamsport, Pa.
Wood's, T. B., Sons, Chambersburg, Pa.

209 **Bracket.** See 166, Wall Brackets.

210 **Drop.** Shaft hangers adapted to be fastened to the ceiling.

Abele, Chris., 537 W. 50th St., New York.
American Tool & Machine Co., 109 Beach St., Boston, Mass.
Brown, A. & F., Co., 25 Dey St., New York.
Diamond Flask & Clamp Co., Richmond, Ind.
Diamond Iron Works, Minneapolis, Minn.
Dodge Mfg. Co., Mishawaka, Ind.
Falls Rivet & Machine Co., Cuyahoga Falls, O.

HANGERS, DROP, continued

Greenwald, I. & E., Co., 720 E. Pearl St., Cincinnati, O.
Hess-Snyder Co., Massillon, O.
Hill Clutch Co., Cleveland, O.
Howard Iron Works, Buffalo, N. Y.
Hunt, Rodney Machine Co., Orange, Mass.
Hunter, James, Machine Co., North Adams, Mass.
Jeffrey Mfg. Co., Columbus, O.
Jones, E. D., & Sons, Co., Pittsfield, Mass.
Jones & Laughlin Steel Co., Pittsburg, Pa.
Lane & Bodley Co., Cincinnati, O.
Liddell Co., Charlotte, N. C.
Link-Belt Engineering Co., Nicetown, Philadelphia, Pa.
Link-Belt Machinery Co., 39th St. and Stewart Ave., Chicago.
McMurray. C. F., Co., Troy, N. Y.
Medart Patent Pulley Co., St. Louis, Mo.
Minneapolis Steel & Machinery Co., 2854 Minnehaha Ave., Minneapolis, Minn.
Moore & White Co., 15th St. & Lehigh Ave., Philadelphia, Pa.
Perkins, B. F., & Son, Holyoke, Mass. *See adv. page 24.*
Robins Conveying Belt Co., Park Row Bldg., New York.
Seelye Mfg. Co., 118 South St., Boston, Mass.
Sellers, Wm., & Co., Inc., 1600 Hamilton St., Philadelphia, Pa.
Smith, James, Woolen Mchy Co., 411 Race St., Philadelphia, Pa.
Standard Pressed Steel Co., 20th & Clearfield Sts, Philda, Pa.
Stilwell-Bierce & Smith-Vaile Co., Dayton, O.
Strait, H. N. Mfg. Co., Kansas City, Kan.
Townsend Furnace & Machine Shop, Albany, N. Y.
Valley Iron Works, Williamsport, Pa.
Weller Mfg. Co., 118 North Ave., Chicago, Ill.
White, John A., Co., Dover, N. H.
Williamsport Clutch & Pulley Co., Williamsport, Pa.
Wood's, T. B., Sons, Chambersburg, Pa.

211. **Head Shaft.** See also 164, Pillow Blocks.

Abele, Chris., 537 W. 50th St., New York.
American Tool & Machine Co., 109 Beach St., Boston, Mass.
Bartlett, C. O., & Snow Co., Cleveland, Ohio.
Brown, A. & F., Co., 25 Dey St., New York.
Cresson. Geo. V., Co., Allegheny Ave., W. of 17th St., Philda, Pa.
Dodge Mfg. Co., Mishawaka, Ind.
Falls Rivet & Machine Co., Cuyahoga Falls, O.
Greenwald, I. & E., Co., 720 E. Pearl St., Cincinnati, O.
Hoppen, J. E., Belleville, N. J.
Jeffrey Mfg. Co., Columbus, O.
Jones & Laughlin Steel Co., Pittsburg, Pa.
Kaestner, Chas., & Co., 241 So. Jefferson St., Chicago, Ill.
Kilburn, Lincoln & Co., Fall River, Mass.
Klein, Chas. C., Marshall & Cambria Sts., Philadelphia, Pa.
Lane & Bodley Co., Cincinnati, O.
Medart Patent Pulley Co., St. Louis, Mo.
Minneapolis Steel & Machinery Co., 2854 Minnehaha Ave., Minneapolis, Minn.
Moore & White Co., 15th St. & Lehigh Ave., Philadelphia, Pa.
Poole Engineering & Machine Co., Baltimore, Md.
Robins Conveying Belt Co.. Park Row Bldg., New York.
Sellers, Wm., & Co., Inc., 1600 Hamilton St., Philadelphia, Pa.

HANGERS, HEAD SHAFT, continued.

Smith James Woolen Mchy Co., 411 Race St., Philadelphia, Pa.
Strait, H. N., Mfg. Co., Kansas City, Kan.
Wood's, T. B., Sons, Chambersburg, Pa.

212 **Post.** See 166, Wall Brackets.

Abele, Chris., 537 W. 50th St., New York.
Allis-Chalmers Co., New York Life Bldg., Chicago, Ill.
American Tool & Machine Co., 109 Beach St., Boston, Mass.
Bartlett, C. O., & Snow Co., Cleveland, Ohio.
Brown, A. & F., Co., 25 Dey St., New York.
Cresson, Geo. V., Co., Allegheny Ave., W. of 17th St., Philda, Pa.
Dodge Mfg. Co., Mishawaka, Ind.
Falls Rivet & Machine Co., Cuyahoga Falls, O.
Goldens Foundry & Machine Co., Columbus, Ga.
Greenwald, I. & E., Co., 720 E. Pearl St., Cincinnati, O.
Hess-Snyder Co., Cleveland, O.
Hill Clutch Co., Cleveland, O.
Howard Iron Works, Buffalo, N. Y.
Hunt, Rodney, Machine Co., Orange, Mass.
Hunter, James, Machine Co., North Adams, Mass.
Jeffrey Mfg. Co., Columbus, O.
Jones & Laughlin Steel Co., Pittsburg, Pa.
Kaestner, Chas., & Co., 241 So. Jefferson St., Chicago, Ill.
Kelly Foundry & Machine Co., Goshen, Ind.
Kilburn, Lincoln & Co., Fall River, Mass.
Klein, Chas. C., Marshall & Cambria Sts., Philadelphia, Pa.
Lane & Bodley Co., Cincinnati, O.
Liddell Co., Charlotte, N. C.
Link-Belt Engineering Co., Nicetown, Philadelphia, Pa.
Link-Belt Machinery Co., 39th St. and Stewart Ave., Chicago.
McMurray, C. F., Co., Troy, N. Y.
Medart Patent Pulley Co., St. Louis, Mo.
Minneapolis Steel & Machinery Co., 2854 Minnehaha Ave., Minneapolis, Minn.
Moore & White Co., 15th St. & Lehigh Ave., Philadelphia, Pa.
Oneida Steel Pulley Co., Oneida, N. Y.
Perkins, B. F., & Son, Holyoke, Mass.
Poole Engineering & Machine Co., Baltimore, Md.
Seelye Mfg. Co., 118 South St., Boston, Mass.
Sellers, Wm., & Co., Inc., 1600 Hamilton St., Philadelphia, Pa.
Smith, James, Woolen Machinery Co., 411 Race St., Philda, Pa.
Stilwell-Bierce and Smith-Vaile Co., Dayton, O.
Strait, H. N., Mfg. Co., Kansas City, Kan.
Townsend Furnace & Machine Shop, Albany, N. Y.
Valley Iron Works, Williamsport, Pa.
Weller Mfg. Co., 118 North Ave., Chicago, Ill.
White, John A., Co., Dover, N. H.
Williamsport Clutch & Pulley Co., Williamsport, Pa.
Wood's, T. B., Sons, Chambersburg, Pa.

213 **OILERS, LOOSE PULLEY, SHAFT, ETC.** For lubricating purposes.

Abele, Chris., 537 W. 50th St., New York.
Alden, R., & Sons, Wauhegan, Ill.
Besly, Chas. H., & Co., 15-21 Clinton St., Chicago, Ill.
Bowen Mfg. Co., Auburn, N. Y.

OILERS, LOOSE PULLEY, ETC., continued.

Brown, A. & F., Co., 25 Dey St., New York.
Graves, W. D., Browns Valley, Minn.
Moore & White Co., 15th St. & Lehigh Ave., Philadelphia, Pa.
Robins Conveying Belt Co., Park Row Bldg., New York.
Scobee Loose Pulley Lubricator Co., Winchester, Ky.
Van Duzen, E. W., Co., Cincinnati, O.

214. **PULLEY BLOCKS.** See Finding List.

215 **PULLEYS.** Wheels having flat or grooved gulls for transmitting power by belt or rope.

216 **Clamp Hub.** Having the hub clamped to the shaft by transverse bolts.

American Tool & Machine Co., 109 Beach St., Boston, Mass.
Bartlett, C. O., & Snow Co., Cleveland, Ohio.
Bates Machine Co., Joliet, Ill.
Cresson, Geo. V., Co., Allegheny Ave., W. of 17th St., Philda, Pa.
Dodge Mfg. Co., Mishawaka, Ind.
Falls Rivet & Machine Co., Cuyahoga Falls, O.
Goldens' Foundry & Machine Co., Columbus, Ga.
Greenwald, I. & E., Co., 720 E. Pearl St., Cincinnati, O.
Howard Iron Works, Buffalo, N. Y.
Jones & Laughlin Steel Co., Pittsburg, Pa.
Kaestner, Chas., & Co., 241 So. Jefferson St., Chicago, Ill.
Kilburn, Lincoln & Co., Fall River, Mass.
Klein, Chas. C., Marshall & Cambria Sts., Philadelphia, Pa.
Lane & Bodley Co., Cincinnati, O.
Medart Patent Pulley Co., St. Louis, Mo
Minneapolis Steel & Machinery Co., 2854 Minnehaha Ave., Minneapolis, Minn.
Moore & White Co., 15th St. & Lehigh Ave., Philadelphia, Pa.
Pittsburg Pulley Co., Pittsburg, Pa.
Poole Engineering & Machine Co., Baltimore, Md.
Robins Conveying Belt Co., Park Row Bldg., New York.
Sellers, Wm., & Co., Inc., 1600 Hamilton St., Philadelphia, Pa.
Smith, James, Woolen Mchy Co., 411 Race St., Philadelphia, Pa.
Strait, H. N., Mfg. Co., Kansas City, Kan.
Wood's, T. B., Sons, Chambersburg, Pa.

217 **Double Arm, Iron.** Having two sets of spokes or arms.

Abele, Chris., 537 West 50th St., New York.
American Tool & Machine Co., 109 Beach St., Boston, Mass.
Bartlett, C. O., & Snow Co., Cleveland, Ohio.
Bates Machine Co., Joliet, Ill.
Brown, A. & F., Co., 25 Dey St., New York.
Christiana Machine Co., Christiana, Pa.
Cresson, Geo. V., Co., Allegheny Ave., W. of 17th St., Philda, Pa.
Dodge Mfg. Co., Mishawaka, Ind.
Falls Rivet & Machine Co., Cuyahoga Falls, O.
Greenwald, I. & E., Co., 720 E. Pearl St., Cincinnati, O.
Howard Iron Works, Buffalo, N. Y.
Hunter, James, Machine Co., North Adams, Mass.
Jeffrey Mfg. Co., Columbus, O.
Jones, E. D., & Sons Co., Pittsfield, Mass.
Jones & Laughlin Steel Co., Pittsburg, Pa.
Kaestner, Chas., & Co., 241 So. Jefferson St., Chicago, Ill.
Klein, Chas. C., Marshall & Cambria Sts., Philadelphia, Pa.

PULLEYS, DOUBLE ARM, continued.

Lane & Bodley Co., Cincinnati, O.
Medart Patent Pulley Co., St. Louis, Mo.
Minneapolis Steel & Machinery Co., 2854 Minnehaha Ave., Minneapolis, Minn.
Moore & White Co., 15th St. & Lehigh Ave., Philadelphia, Pa.
Pittsburg Pulley Co., Pittsburg, Pa.
Poole Engineering & Machine Co., Baltimore, Md.
Robins Conveying Belt Co., Park Row Bldg., New York.
Sellers, Wm., & Co., Inc., 1600 Hamilton St., Philadelphia, Pa.
Smith, James, Woolen Mchy Co., 411 Race St., Philadelphia, Pa.
Stilwell-Bierce & Smith-Vaile Co., Dayton, O.
Strait, H. N., Mfg. Co., Kansas City, Kan.
Williamsport Clutch & Pulley Co., Williamsport, Pa.
Wood's, T. B., Sons, Chambersburg, Pa.

218 **Flange.** Having flanges at sides to keep belts from slipping off.

Abele, Chris., 537 W. 50th St., New York.
American Tool & Machine Co., 109 Beach St., Boston, Mass.
Bartlett, C. O., & Snow Co., Cleveland, Ohio.
Brown, A. & F., Co., 25 Dey St., New York.
Chase Pulley Co., Providence, R. I.
Christiana Machine Co., Christiana, Pa.
Cresson, Geo. V., Co., Allegheny Ave., W. of 17th St., Philda, Pa.
Dodge Mfg. Co., Mishawaka, Ind.
Diamond Iron Works, Minneapolis, Minn.
Falls Rivet & Machine Co., Cuyahoga Falls, O.
Goldens Foundry & Machine Co., Columbus, Ga.
Greenwald, I. & E., Co., 720 E. Pearl St., Cincinnati, O.
Hess-Snyder Co., Massillon, O.
Howard Iron Works, Buffalo, N. Y.
Hunter, James, Machine Co., North Adams, Mass.
Jones & Laughlin Steel Co., Pittsburg, Pa.
Kaestner, Chas., & Co., 241 So. Jefferson St., Chicago, Ill.
Klein, Chas. C., Marshall & Cambria Sts., Philadelphia, Pa.
Lane & Bodley Co., Cincinnati, O.
Medart Patent Pulley Co., St. Louis, Mo.
Minneapolis Steel & Machinery Co., 2854 Minnehaha Ave., Minneapolis, Minn.
Moore & White Co., 15th St., & Lehigh Ave., Philadelphia, Pa.
Pittsburg Pulley Co., Pittsburg, Pa.
Poole Engineering & Machine Co., Baltimore, Md.
Robins Conveying Belt Co., Park Row Bldg., New York.
Sellers, Wm., & Co., Inc., 1600 Hamilton St., Philadelphia, Pa.
Smith, James, Woolen Mchy Co., 411 Race St., Philadelphia, Pa.
Strait, H. N., Mfg. Co., Kansas City, Kan.
White, John A., Co., Dover, N. H.
Williamsport Clutch & Pulley Co., Williamsport, Pa.
Wood's, T. B., Sons, Chambersburg, Pa.

219 **Fly Wheel.** With belt faces for belts.

American Tool & Machine Co., 109 Beach St., Boston, Mass.
Bates Machine Co., Joliet, Ill.
Brown, A. & F., Co., 25 Dey St., New York.
Cresson, Geo. V., Co., Allegheny Ave., W. of 17th St., Philda, Pa.
Dodge Mfg. Co., Mishawaka, Ind.
Falls Rivet & Machine Co., Cuyahoga Falls, O.

PULLEYS, FLY WHEEL, continued.

Greenwald, I. & E., Co., 720 E. Pearl St., Cincinnati, O.
Jones & Laughlin Steel Co., Pittsburg, Pa.
Lane & Bodley Co., Cincinnati, O.
Minneapolis Steel & Machinery Co., 2854 Minnehaha Ave., Minneapolis, Minn.
Moore & White Co., 15th St., & Lehigh Ave., Philadelphia, Pa.
Pittsburg Pulley Co., Pittsburg, Pa.
Poole Engineering & Machine Co., Baltimore, Md.
Smith James Woolen Mchy Co., 411 Race St., Philadelphia, Pa.
Strait, H. N., Mfg. Co., Kansas City, Kan.
Williamsport Clutch & Pulley Co., Williamsport, Pa.
Wood's, T. B., Sons, Chambersburg, Pa.

220 **Friction Clutch.** Having friction clutches so that they may be thrown into action or not as required.

Abele, Chris., 537 W. 50th St., New York.
American Tool & Machine Co., 109 Beach St., Boston, Mass.
Brown, A. & F., Co., 25 Dey St., New York.
Bartlett, C. O., & Snow Co., Cleveland, Ohio.
Cresson, Geo. V., Co., Allegheny Ave., W. of 17th St., Philda, Pa.
Diamond Iron Works, Minneapolis, Minn.
Dodge Mfg. Co., Mishawaka, Ind.
Eastern Machinery Co., New Haven, Conn.
Falls Rivet & Machine Co., Cuyahoga Falls, O.
Greenwald, I. & E. Co., 720 E. Pearl St., Cincinnati, O. *See adv. page 4.*
Hess-Snyder Co., Massillon, O.
Hill Clutch Co., Cleveland, O.
Howard Iron Works, Buffalo, N. Y.
Hunter, Jas., Machine Co., North Adams, Mass.
Jacobson Machine Mfg. Co., Warren, Pa.
Jeffrey Mfg. Co., Columbus, O.
Jones & Laughlin Steel Co., Pittsburg, Pa.
Kaestner, Chas., & Co., 241 So. Jefferson St., Chicago, Ill.
Klein, Chas. C., Marshall & Cambria Sts., Philadelphia, Pa.
Lane & Bodley Co., Cincinnati, O.
Link-Belt Engineering Co., Nicetown, Philadelphia, Pa.
Mason, Volney, W., & Co., Providence, R. I.
Medart Patent Pulley Co., St. Louis, Mo.
McMurray, C. F., Co., Troy, N. Y.
Minneapolis Steel & Machinery Co., 2854 Minnehaha Ave., Minneapolis, Minn.
Moore & White Co., 15th St. and Lehigh Ave., Philadelphia, Pa.
Oesterlein Mche. Co., Cincinnati, O.
Poole Engineering & Machine Co., Baltimore, Md.
Reeves Pulley Co., Columbus, Ind.
Sellers, Wm., & Co., Inc., 1600 Hamilton St., Philadelphia, Pa.
Sinclair-Scott Co., Baltimore, Md.
Smith, James, Woolen Machinery Co., 411 Race St., Philda.
Stilwell-Bierce & Smith-Vaile Co., Dayton, O.
Strait, H. N., Mfg. Co., Kansas City, Kan.
Taper Sleeve Pulley Works, Erie, Pa.
Weller Mfg. Co., 118 North Ave., Chicago, Ill.
Willamette Iron & Steel Works, Portland, Ore.
Williamsport Clutch & Pulley Co., Williamsport, Pa.
Wilmarth & Morman Co., Grand Rapids, Mich.
Wood's, T. B., Sons, Chambersburg, Pa.

PULLEYS, FRICTION CLUTCH, continued.

221 **Gallows or Guide.** Loose pulleys mounted in movable frames to guide and tighten belts.

Abele, Chris., 537 W. 50th St., New York.
Brown, A. & F., Co., 25 Dey St., New York.
Cresson, Geo. V., Co., Allegheny Ave., W. of 17th St., Philda, Pa.
Dodge Mfg. Co., Mishawaka, Ind.
Falls Rivet & Machine Co., Cuyahoga Falls, O.
Klein, Chas. C., Marshall & Cambria Sts., Philadelphia, Pa.
Minneapolis Steel & Machinery Co., 2854 Minnehaha Ave., Minneapolis, Minn.
Perkins, B. F., & Son, Holyoke, Mass. *See adv. page 24.*
Sellers, Wm., & Co., Inc., 1600 Hamilton St., Philadelphia, Pa.
Smith James Woolen Mchy Co., 411 Race St., Philadelphia, Pa.
Wood's, T. B., Sons, Chambersburg, Pa.

222 **Grooved.** For carrying wire or fibre ropes.

Abele, Chris., 537 W. 50th St., New York.
Allis-Chalmers Co., New York Life Bldg., Chicago, Ill.
American Tool & Machine Co., 109 Beach St., Boston, Mass.
Bartlett, C. O., & Snow Co., Cleveland, Ohio.
Bates Machine Co., Joliet, Ill.
Brown, A. & F., Co., 25 Dey St., New York.
Cresson, Geo. V., Co., Allegheny Ave., W. of 17th St., Philda, Pa.
Diamond Iron Works, Minneapolis, Minn.
Dodge Mfg. Co., Mishawaka, Ind.
Falls Rivet & Machine Co., Cuyahoga Falls, O.
Goldens Foundry & Machine Co., Columbus, Ga.
Greenwald, I. & E., Co., 720 E. Pearl St., Cincinnati, O.
Hill Clutch Co., Cleveland, O.
Howard Iron Works, Buffalo, N. Y.
Hunt, Rodney, Machine Co., Orange, Mass.
Jones & Laughlin Steel Co., Pittsburg, Pa.
Kaestner, Chas., & Co., 241 So. Jefferson St., Chicago, Ill.
Kilburn, Lincoln & Co., Fall River, Mass.
Lane & Bodley Co., Cincinnati, O.
Link-Belt Machinery Co., 39th St. & Stewart Ave., Chicago, Ill.
Medart Patent Pulley Co., St. Louis, Mo.
Minneapolis Steel & Machinery Co., 2854 Minnehaha Ave., Minneapolis, Minn.
Perkins, B. F., & Son, Holyoke, Mass.
Poole Engineering & Machine Co., Baltimore, Md.
Quincy Engine Works, Quincy, Ill.
Reeves Pulley Co., Columbus, Ind.
Sellers, Wm., & Co., Inc., 1600 Hamilton St., Philadelphia, Pa.
Strait, H. N., Mfg. Co., Kansas City, Kan.
Weller Mfg. Co., 118 North Ave., Chicago, Ill.
Wood's, T. B., Sons, Chambersburg, Pa.

222A **Paper.**

Bartlett, C. O., & Snow Co., Cleveland, Ohio.
Rockwood Mfg. Co., Indianapolis, Ind.

223 **Pressed Steel.** Made of pressed steel for the sake of tightness and strength.

American Pulley Co., 29th & Bristol Sts., Philadelphia, Pa.
Oneida Steel Pulley Co., Oneida, N. Y.

PULLEYS, continued.

224 **Single Arm or Plain.** The standard form of belt pulleys having a single set of spokes or arms.

Abele, Chris., 537 W. 50th St., New York.
American Tool & Machine Co., 109 Beach St., Boston, Mass.
Brown. A. & F., Co., 25 Dey St., New York.
Cresson, Geo. V., Co., Allegheny Ave., W. of 17th St., Philda, Pa.
Christiana Machine Co., Christiana, Pa.
Dodge Mfg. Co., Mishawaka, Ind.
Falls Rivet & Machine Co., Cuyahoga Falls, O.
Greenwald, I. & E. Co., 720 E. Pearl St., Cincinnati, O. *See adv. page 4.*
Hess-Snyder Co., Massillon, O.
Hinds, Thos., Malone, N. Y.
Howard Iron Works, Buffalo, N. Y.
Hunt, Rodney, Machine Co., Orange, Mass.
Hunter, James, Machine Co., North Adams, Mass.
Jones, E. D., & Sons Co., Pittsfield, Mass.
Jones & Laughlin Steel Co., Pittsburg, Pa.
Kaestner, Chas., & Co., 241 S. Jefferson St., Chicago, Ill.
Klein, Chas. C., Marshall & Cambria Sts., Philadelphia, Pa.
Lane & Bodley Co., Cincinnati, O.
Liddell Co., Charlotte, N. C.
McMurray, C. F., Co., Troy, N. Y.
Medart Patent Pulley Co., St. Louis, Mo.
Minneapolis Steel & Machinery Co., 2854 Minnehaha Ave., Minneapolis, Minn.
Pittsburg Pulley Co., Pittsburg, Pa.
Poole Engineering & Machine Co., Baltimore, Md.
Sellers, Wm., & Co., Inc., 1600 Hamilton St., Philadelphia, Pa.
Weller Mfg. Co., 118 North Ave., Chicago, Ill.
White, John A., Co., Dover, N. H.
Windsor Locks Machine Co., Windsor Locks, Conn.
Wood's, T. B., Sons, Chambersburg, Pa.

225 **Split.** Made in halves so that they may be erected on a shaft by separating the parts and clamping them in position.

Abele, Chris., 537 W. 50th St., New York.
American Tool & Machine Co., 109 Beach St., Boston, Mass.
Brown, A. & F., Co., 25 Dey St., New York.
Chase Pulley Co., Providence, R. I.
Cresson, Geo. V., Co., Allegheny Ave., W. of 17th St., Philda, Pa.
Diamond Iron Works, Minneapolis, Minn.
Dodge Mfg. Co., Mishawaka, Ind.
Eastwood, Benjamin, Co., Paterson, N. J.
Falls Rivet & Machine Co., Cuyahoga Falls, O.
Goldens Foundry & Machine Co., Columbus, Ga.
Greenwald, I. & E., Co., 720 E. Pearl St., Cincinnati, O.
Hess-Snyder Co., Massillon, O.
Howard Iron Works, Buffalo, N. Y.
Hunt, Rodney, Machine Co., Orange, Mass .
Hunter, Jas., Machine Co., North Adams, Mass.
Jeffrey Mfg. Co., Columbus, O.
Jones, E. D., & Sons Co., Pittsfield, Mass.
Jones & Laughlin Steel Co., Pittsburg, Pa.
Klein, Chas. C., Marshall & Cambria Sts., Philadelphia, Pa.
Lane & Bodley Co., Cincinnati, O.

PULLEYS, SPLIT, continued.

Liddell Co., Charlotte, N. C.
Link-Belt Machinery Co., 39th St. & Stewart Ave., Chicago, Ill.
McMurray, C. F., Co., Troy, N. Y.
Medart Patent Pulley Co., St. Louis, Mo.
Minneapolis Steel & Machinery Co., 2854 Minnehaha Ave., Minneapolis, Minn.
Moore & White Co., 15th St. & Lehigh Ave., Philadelphia, Pa.
Perkins, B. F., & Son, Holyoke, Mass.
Pittsburg Pulley Co., Pittsburg, Pa.
Poole Engineering & Machine Co., Baltimore, Md.
Schofield Gear & Pulley Co., Providence, R. I.
Sellers, Wm., & Co., Inc., 1600 Hamilton St., Philadelphia, Pa.
Stilwell-Bierce & Smith-Vaile Co., Dayton, O.
White, John A., Co., Dover, N . H .
Williamsport Clutch & Pulley Co., Williamsport, Pa.
Wood's, T. B., Sons, Chambersburg, Pa.

226 **Tight and Loose.** By which the machine may be readily started and stopped.

Abele, Chris., 537 W. 50th St., New York.
American Tool & Machine Co., 109 Beach St., Boston, Mass.
Bartlett, C. O., & Snow Co., Cleveland, Ohio.
Brown, A. & F., Co., 25 Dey St., New York.
Cresson, Geo. V., Co., Allegheny Ave., W. of 17th St., Philda, Pa.
Diamond Iron Works, Minneapolis, Minn.
Dodge Mfg. Co., Mishawaka, Ind.
Falls Rivet & Machine Co., Cuyahoga Falls, O.
Goldens Foundry & Machine Co., Columbus, Ga.
Greenwald, I. & E., Co., 720 E. Pearl St., Cincinnati, O.
Hess-Snyder Co., Massillon, O.
Howard Iron Works, Buffalo, N. Y.
Hunter, James, Machine Co., North Adams, Mass.
Jeffrey Mfg. Co., Columbus, O.
Jones, E. D., & Sons Co., Pittsfield, Mass.
Jones & Laughlin Steel Co., Pittsburg, Pa.
Klein, Chas. C., Marshall & Cambria Sts., Philadelphia, Pa.
Lane & Bodley Co., Cincinnati, O.
Liddell Co., Charlotte, N. C.
Link-Belt Machinery Co., 39th St., & Stewart Ave., Chicago, Ill.
McMurray, C. F., Co., Troy, N. Y.
Medart Patent Pulley Co., St. Louis, Mo.
Minneapolis Steel & Machinery Co., 2854 Minnehaha Ave., Minneapolis, Minn.
Oneida Steel Pulley Co., Oneida, N. Y.
Poole Engineering & Machine Co., Baltimore, Md.
Reeves Pulley Co., Columbus, Ind.
Sellers, Wm., & Co., Inc., 1600 Hamilton St., Philadelphia, Pa.
Wood's, T. B., Sons, Chambersburg, Pa.

227 **Wood Split.** Wood pulleys made in halves.

Bartlett, C. O., & Snow Co., Cleveland, Ohio.
Chase Pulley Co., Providence, R. I.
Dodge Mfg. Co., Mishawaka, Ind.
Keasey Pulley Co., Toledo, O.
Carey, W. W., Lowell, Mass.
Klein, Chas. C., Marshall & Cambria Sts., Philadelphia, Pa.

PULLEYS, WOOD SPLIT, continued.

Medart Patent Pulley Co., St. Louis, Mo.
Oneida Steel Pulley Co., Oneida, N. Y.
Reeves Pulley Co., Columbus, Ind.
Saginaw Mfg. Co., Saginaw, Mich.
Strait, H. N., Mfg. Co., Kansas City, Kans.
Washington Pulley Co., Ballard, Wash.
Weller Mfg. Co., 118 North Ave., Chicago, Ill.
Williamsport Clutch & Pulley Co., Williamsport, Pa.
Wing, J. T., & Co., Detroit, Mich.

228 **ROPE.** For power transmission.

American Mfg. Co., 63 Wall St., New York.
Broderick & Bascom Rope Co., St. Louis, Mo.
Carpenter, Geo. B., & Co., 208 S. Water St., Chicago, Ill.
Columbian Cordage Co., Auburn, N. Y.
Cresson, Geo. V., Co., Allegheny Ave., W. of 17th St., Philda. Pa.
Dodge Mfg. Co., Mishawaka, Ind.
Durable Wire Rope Co., 28-30 Atlantic Ave., Boston, Mass.
Greenwald, I. & E., Co., 720 E. Pearl St., Cincinnati, Ohio.
Hunt, C. W., Co., 45 Broadway, New York.
Kaestner, Chas., & Co., 241 So. Jefferson St., Chicago, Ill.
Klein, Chas. C., Marshall & Cambria Sts., Philadelphia, Pa.
Lane & Bodley Co., Cincinnati, O.
Leschen, A., & Sons Rope Co., St. Louis, Mo.
Link-Belt Engineering Co., Nicetown, Philadelphia, Pa.
Macomber & Whyte Co., 21 S. Canal St., Chicago, Ill.
Minneapolis Steel & Machinery Co., 2854 Minnehaha Ave., Minneapolis, Minn.
Samson Cordage Works, 115 Congress St., Boston, Mass.
Sellers, Wm., & Co., Inc., 1600 Hamilton St., Philadelphia, Pa.
Stilwell-Bierce & Smith-Vaile Co., Dayton, O.
Weller Mfg. Co., 118 North Ave., Chicago, Ill.
Wood's, T. B., Sons, Chambersburg, Pa.

229 **SHAFTING.** Steel or iron bars, usually cylindrical for transmitting rotary motion.

American Tool & Machine Co., 109 Beach St., Boston, Mass.
Aultman Co., Canton, O.
Borden & Selleck Co., 48 Lake St., Chicago, Ill.
Brown, A. & F., Co., 25 Dey St., New York.
Capital City Machine Works, Columbus, O.
Christiana Machine Co., Christiana, Pa.
Cresson, Geo. V., Co., Allegheny Ave., W. of 17th St., Philda, Pa.
Cumberland Steel Co., Cumberland, Md.
Dodge Mfg. Co., Mishawaka, Ind.
Eastwood, Benj., Co., Paterson, N. J.
Fairmount Machine Co., 2106 Wood St., Philadelphia, Pa.
Finished Steel Co., Youngstown, O.
Goldens Foundry & Machine Co., Columbus, Ga.
Greenwald, I. & E. Co., 720 E. Pearl St., Cincinnati, O. *See adv. page 4.*
Hill Clutch Co., Cleveland, O.
Hinds, Thos., Malone, N. Y.
Howard Iron Works, Buffalo, N. Y.
Hunter, Jas., Machine Co., North Adams, Mass.
Humphrey Machine Co., Keene, N. H.

HAFTING, continued

Jeffrey Mfg. Co., Columbus, O.
Jones, E. D., & Sons Co., Pittsfield, Mass.
Jones, W. A., Foundry & Machine Co., 142 W. North Ave., Chicago, Ill.
Jones & Laughlin Steel Co., Pittsburg, Pa.
Klein, Chas. C., Marshall & Cambria Sts., Philadelphia, Pa.
Lane & Bodley Co., Cincinnati, O.
Liddell Co., Charlotte, N. C.
Medart Patent Pulley Co., St. Louis, Mo.
Minneapolis Steel & Machinery Co., 2854 Minnehaha Ave., Minneapolis, Minn.
Pardee, C., Works, Perth Amboy, N. J.
Perkins, B. F., & Son, Holyoke, Mass.
Pittsburg Steel Shafting Co., Rankin Sta., Pa.
Poole Engineering & Machine Co., Baltimore, Md.
Robins Conveying Belt Co., Park Row Bldg., New York.
Ross, Josiah, Buffalo, N. Y.
Sellers, Wm., & Co., Inc., 1600 Hamilton St., Philadelphia, Pa.
Smith, S. Morgan, York, Pa.
Stilwell-Bierce & Smith-Vaile Co., Dayton, O.
Strait, N. H., Mfg. Co., Kansas City, Kans.
Townsend Furnace & Machine Shop, Albany, N. Y.
Valley Iron Works, Williamsport, Pa.
Weller Mfg. Co., 118 North Ave., Chicago, Ill.
Willamette Iron & Steel Works, Portland, Oregon.
Williamsport Clutch & Pulley Co., Williamsport, Pa.
Windsor Locks Machine Co., Windsor Locks, Conn.
Wood's, T. B., Sons, Chambersburg, Pa.

30 **Flexible.** Pliable connections for transmitting rotary motion from one shaft to another.

Chicago Flexible Shaft Co., LaSalle & Ontario Sts., Chicago.
Coates Clipper Mfg. Co., Worcester, Mass.
Fancher Machine Co., Baldwinsville, N. Y.
Stow Flexible Shaft Co., 26th & Callowhill Sts., Philadelphia.
Stow Mfg. Co., Binghamton, N. Y.

31 **SHEAVES, ROPE.** See 222, Grooved Pulleys.

32 **SHIFTER FORKS OR DEVICES.** Arms engaging the sides of a belt, by which it may be moved sideways from tight to loose pulleys or vice versa.

Abele, Chris., 537 W. 50th St., New York.
Aultman Co., Canton, O.
Bartlett, C. O., & Snow Co., Cleveland, Ohio.
Brown, A. & F., Co., 25 Dey St., New York.
Cresson, Geo. V., Co., Allegheny Ave., W. of 17th St., Philda, Pa.
Dodge Mfg. Co., Mishawaka, Ind.
Falls Rivet & Machine Co., Cuyahoga Falls, O.
Greenwald, I. & E., Co., 720 E. Pearl St., Cincinnati, O.
Kaestner, Chas., & Co., 241 So. Jefferson St., Chicago, Ill.
Klein, Chas. C., Marshall & Cambria Sts., Philadelphia, Pa.
Lane & Bodley Co., Cincinnati, O.
McMurray, C. F., Co., Troy, N. Y.
Minneapolis Steel & Machinery Co., 2854 Minnehaha Ave., Minneapolis, Minn.
Moore & White Co., 15th St. & Lehigh Ave., Philadelphia, Pa.

SHIFTER FORKS, continued.

Sellers, Wm., & Co., Inc., 1600 Hamilton St., Philadelphia, Pa.
Weller Mfg. Co., 118 North Ave., Chicago, Ill.
Wood's, T. B., Sons, Chambersburg, Pa.

233 **SPEED TRANSMISSION DEVICES.** For regulating speed.

Abele, Chris., 537 W. 50th St., New York.
Cresson, Geo. V., Co., Allegheny Ave., W. of 17th St., Philda, Pa.
Evans Friction Cone Co., 85 Water St., Boston, Mass.
Moore & White Co., 15th St. & Lehigh Ave., Philadelphia, Pa.
National Machine Tool Co., Cincinnati, O.
Reeves Pulley Co., Columbus, Ind.

234 **STANDS, FLOOR.** Shaft bearings which are fastened to the floor.

Abele, Chris., 537 W. 50th St., New York.
Bartlett, C. O., & Snow Co., Cleveland, Ohio.
Brown, A. & F., Co., 25 Dey St., New York.
Cresson, Geo. V., Co., Allegheny Ave., W. of 17th St., Philda.
Dodge Mfg. Co., Mishawaka, Ind.
Falls Rivet & Machine Co., Cuyahoga Falls, O.
Goldens Foundry & Machine Co., Columbus, Ga.
Greenwald, I. & E. Co., 720 E. Pearl St., Cincinnati, O. *See adv. page 4.*
Hill Clutch Co., Cleveland, O.
Hunter, Jas., Machine Co., North Adams, Mass.
Jones, E. D., & Sons Co., Pittsfield, Mass.
Jones & Laughlin Steel Co., Pittsburg, Pa.
Kaestner, Chas., & Co., 241 So. Jefferson St., Chicago, Ill.
Lane & Bodley Co., Cincinnati, O.
McMurray, C. F., Co., Troy, N. Y.
Medart Patent Pulley Co., St. Louis, Mo.
Minneapolis Steel & Machinery Co., 2854 Minnehaha Ave., Minneapolis, Minn.
Moore & White Co., 15th St. & Lehigh Ave., Philadelphia, Pa.
Perkins, B. F., & Son, Holyoke, Mass.
Poole Engineering & Machine Co., Baltimore, Md.
Robins Conveying Belt Co., Park Row Bldg., New York.
Sellers, Wm., & Co., Inc., 1600 Hamilton St., Philadelphia, Pa.
Smith, Jas., Woolen Machinery Co., 411 Race St., Philadelphia.
Standard Pressed Steel Co., 20th & Clearfield Sts., Philda, Pa.
Stilwell-Bierce & Smith-Vaile Co., Dayton, O.
Strait, H. N., Mfg. Co., Kansas City, Kan.
Townsend Furnace & Machine Shop, Albany, N. Y.
Valley Iron Works, Williamsport, Pa.
Walworth Mfg. Co., 134 Federal St., Boston, Mass.
Weller Mfg. Co., 118 North Ave., Chicago, Ill.
White, John A., Co., Dover, N. H.
Williamsport Clutch & Pulley Co., Williamsport, Pa.
Woods, T. B., Sons, Chambersburg, Pa.

235 **Mule.** Pulley stands for supporting guide pulleys.

Bartlett C .O., & Snow Co., Cleveland, Ohio.
Brown, A. & F., Co., 25 Dey St., New York.
Cresson, Geo. V., Co., Allegheny Ave., W. of 17th St., Philda.
Dodge Mfg. Co., Mishawaka, Ind.
Falls Rivet & Machine Co., Cuyahoga Falls, O.

STANDS, MULE, continued.

Goldens Foundry & Machine Co., Columbus, Ga.
Greenwald, I. & E., Co., 720 E. Pearl St., Cincinnati, O.
Howard Iron Works, Buffalo, N. Y.
Hunter, Jas., Machine Co., North Adams, Mass.
Jones & Laughlin Steel Co., Pittsburg, Pa.
Kaestner, Chas., & Co., 241 So. Jefferson St., Chicago, Ill.
Lane & Bodley Co., Cincinnati, O.
Medart Pulley Co., St. Louis, Mo.
McMurray, C. F., Co., Troy, N. Y.
Minneapolis Steel & Machinery Co., 2854 Minnehaha Ave., Minneapolis, Minn.
Poole Engineering & Machine Co., Baltimore, Md.
Sellers, Wm., & Co., Inc., 1600 Hamilton St., Philadelphia, Pa.
Smith, James, Woolen Mch'y Co., 411 Race St., Philda, Pa.
Strait, H. N., Mfg. Co., Kansas City, Kan.
Valley Iron Works, Williamsport, Pa.
Weller Mfg. Co., 118 North Ave., Chicago, Ill.
Williamsport Clutch & Pulley Co., Williamsport, Pa.
Wood's, T. B., Sons, Chambersburg, Pa.

236 **TACKLE BLOCKS.** See Finding List.

237 **TAKE-UPS.** For use where it is necessary to take up slack in belts, as in elevators.

Bartlett, C. O .,& Snow Co., Cleveland, Ohio.
Brown, A. & F., Co., 25 Dey St., New York.
Diamond Iron Works, Minneapolis, Minn.
Dodge Mfg. Co., Mishawaka, Ind.
Greenwald, I. & E., Co., 720 E. Pearl St., Cincinnati, O.
Jeffrey Mfg. Co., Columbus, O.
Jones & Laughlin Steel Co., Pittsburg, Pa.
Klein, Chas. C., Marshall & Cambria Sts., Philadelphia, Pa.
Lane & Bodley Co., Cincinnati, O.
Link-Belt Engineering Co., Nicetown, Philadelphia, Pa.
Perkins, B. F., & Son, Holyoke, Mass.
Robins Conveying Belt Co., Park Row Bldg., New York.
Strait, H. N., Mfg. Co., Kansas City, Kan.
Valley Iron Works, Williamsport, Pa.
Wood's, T. B., Sons, Chambersburg, Pa.

238 **TRIPPERS, BELT CONVEYOR.** For dumping the materials carried on conveyors.

Abele, Chris., 537 W. 50th St., New York.
Bartlett, C. O., & Snow Co., Cleveland, Ohio.
Dodge Mfg. Co., Mishawaka, Ind.
Kaestner, Chas., & Co., 241 So. Jefferson St., Chicago, Ill.
Link-Belt Engineering Co., Nicetown, Philadelphia, Pa.
Minneapolis Steel & Machinery Co., 2854 Minnehaha Ave., Minneapolis, Minn.
Robins Conveying Belt Co., Park Row Bldg., New York.

239 **WHEELS, ROPE TRANSMISSION.** See 222, Grooved Pulleys.

Aultman Co., Canton, O.
Bartlett, C. O., & Snow Co., Cleveland, Ohio.
Brown, A. & F., Co., 25 Dey St., New York.
Cresson, Geo. V., Co., Allegheny Ave., W. of 17th St., Philda.
Dodge Mfg. Co., Mishawaka, Ind.

WHEELS, ROPE TRANSMISSION, continued

Falls Rivet & Machine Co., Cuyahoga Falls, O.
Howard Iron Works, Buffalo, N. Y.
Kaestner, Chas., & Co., 241 So. Jefferson St., Chicago, Ill.
Lane & Bodley Co., Cincinnati, O.
Link-Belt Engineering Co., Nicetown, Philadelphia, Pa.
Minneapolis Steel & Machinery Co., 2854 Minnehaha Ave., Minneapolis, Minn.
Moore & White Co., 15th St. & Lehigh Ave., Philadelphia, Pa.
New Jersey Foundry & Machine Co., 9 Murray St., New York. New York.
Sellers, Wm., & Co., Inc., 1600 Hamilton St., Philadelphia, Pa.
Stilwell-Bierce & Smith-Vaile Co., Dayton, O.
Valley Iron Works, Williamsport, Pa.
Wood's, T. B., Sons, Chambersburg, Pa.

240 **Sprocket.** Toothed wheels for chain driving.

Aultman Co., Canton, O.
Brown, A. & F., Co., 25 Dey St., New York.
Buhl Malleable Co., Adair & Wight Sts., Detroit, Mich.
Bullock, C. K., 1361 Ridge Ave., Philadelphia, Pa.
Dodge Mfg. Co., Mishawaka, Ind.
Greenwald, I. & E., Co., 720 E. Pearl St., Cincinnati, O.
Jeffrey Mfg. Co., Columbus, O.
Lane & Bodley Co., Cincinnati, O.
Link-Belt Engineering Co., Nicetown, Philadelphia, Pa.
Minneapolis Steel & Machinery Co., 2854 Minnehaha Ave., Minneapolis, Minn.
New Jersey Foundry & Machine Co., 9 Murray St., New York.
Valley Iron Works, Williamsport, Pa.
Williamsport Clutch & Pulley Co., Williamsport, Pa.

241 **WINDING DRUMS.** Grooved drums carrying ropes and used for hoisting purposes.

Abele, Chris., 537 W. 50th St., New York.
Allis-Chalmers Co., New York Life Bldg., Chicago, Ill.
Bartlett, C. O., & Snow Co., Cleveland, Ohio.
Brown, A. & F., Co., 25 Dey St., New York.
Eastern Machinery Co., New Haven, Conn.
Greenwald, I. & E., Co., 720 E. Pearl St., Cincinnati, O.
Kaestner, Chas., & Co., 241 So. Jefferson St., Chicago, Ill.
Lane & Bodley Co., Cincinnati, O.
Moore & White Co., 15th St. & Lehigh Ave., Philadelphia, Pa.
New Jersey Foundry & Machine Co., 9 Murray St., New York.
Strait, H. N., Mfg. Co., Kansas City, Kan.

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242 PUMPING APPARATUS.

243 **AIR COMPRESSORS.** For compressing air, gases, etc.; used for caissons, artesian well works, mines, compression tanks, air brakes, breweries, and for power where steam is not available.

Advance Pump & Compressor Co., Battle Creek, Mich.
American Steam Pump Co., Battle Creek, Mich.
American Air Compressor Works, 26 Cortlandt St., New York.

AIR COMPRESSORS, continued

American Water Motor Co., Columbus, O.
American Well Works, Aurora, Ill.
Austin Mfg. Co., Manhattan Bldg., Chicago, Ill.
Baird Machinery Co., Pittsburg, Pa.
Barr Pump Co., Germantown, Philadelphia, Pa.
Blaisdell Machinery Co., Bradford, Pa.
Blake, Geo. F., Mfg. Co., 114 Liberty St., New York.
Blanchard Machine Co., Boston, Mass.
Bovaird & Seyfang Mfg. Co., 34 Davis St., Bradford, Pa.
Buffalo Steam Pump Co., North Tonawanda, N. Y.
Chicago Pneumatic Tool Co., Fisher Bldg., Chicago, Ill.
Clark Novelty Co., Rochester, N. Y.
Clayton Air Compressor Works, 114 Liberty St., New York.
Cleveland Faucet Co., 15 Frankfort St., Cleveland, O.
Cleveland Pneumatic Tool Co., Cleveland, Ohio.
Crowell, Gilmer, 294 Graham St., Brooklyn, N. Y.
Curtis & Co. Mfg. Co., St. Louis, Mo.
Davidson, M. T., 43-53 Keap St., Brooklyn, N. Y.
Dean Bros. Steam Pump Works, 10th St. and Senate Ave., Indianapolis, Ind.
Deane Steam Pump Co., Holyoke, Mass.
Doble Abner Co., Howard & Fremont Sts., San Francisco, Cal.
Fairbanks Co., Broome & Elm Sts., New York.
Douglas, W. & B., Middletown, Conn.
Fisher, A. J., 50 So. Clinton St., Chicago, Ill.
Foster Pump Works, 36 Bridge St., Brooklyn, N. Y.
Gardner Governor Co., Quincy, Ill.
Goulds Mfg. Co., Seneca Falls, N. Y. *See adv. page 13.*
Grant Iron Works, Mahanoy City, Pa.
Great Lakes Engineering Works, Detroit, Mich.
Guild & Garrison, 457 Kent Ave., Brooklyn, N. Y.
Hardie-Tynes Foundry & Machine Co., Birmingham, Ala.
Hall Steam Pump Co., Allegheny, Pa.
Herron & Bury Mfg. Co., Erie, Pa.
Ingersoll-Sergeant Drill Co., 26 Cortlandt St., New York.
Johnson Service Co., Milwaukee, Wis.
Imperial Engine Co., Painted Post, N. Y.
Knapp Mfg. Co., 24 Frankfort St., New York.
Laidlaw-Dunn-Gordon Co., 114 Liberty St., New York.
Lambert Hoisting Engine Co., Newark, N. J.
Lane & Bodley Co., Cincinnati, O.
Manistee Iron Works Co., Manistee, Mich.
McGowan, John H., Co., Cincinnati, O.
McKiernan Drill Co., 170 Broadway, New York.
Murray Iron Works Co., Burlington, Ia.
National Foundry & Machine Co., Louisville, Ky.
New York Air Brake Co., 66 Broadway, New York.
Norwalk Iron Works, South Norwalk, Conn. *See adv. page 14.*
Pedrick & Ayer Co., Plainfield, N. J.
Pulsometer Steam Pump Co., 135 Greenwich St., New York.
Rand Drill Co., 128 Broadway, New York. *See adv. page 21.*
Rarig Engineering Co., Columbus, O.
Reliance Machine & Tool Works, 3323 Franklin Ave., St. Louis.
Rumsey & Co., Ltd., Seneca Falls, N. Y.
Snider-Hughes Co., Cleveland, O.
Southern Engine & Boiler Works, Jackson, Tenn.

AIR COMPRESSORS, continued

Southwark Foundry & Machine Co., 430 Washington Ave., Philadelphia, Pa.
Springfield Elevator & Pump Co., Springfield, Mass.
Steeger, Henry, 143 E. 31st St., New York.
Stickney, Chas. A., & Co., St. Paul, Minn.
Stilwell-Bierce & Smith-Vaile Co., Dayton, O.
Sullivan Machinery Co., 135 Adams St., Chicago, Ill.
Union Iron Works, San Francisco, Cal.
Union Steam Pump Co., Battle Creek, Mich.
Warren Steam Pump Co., Warren, Mass.
Westinghouse Air Brake Co., Pittsburg, Pa.
Wilson-Snyder Mfg. Co., Ross and Water Sts., Pittsburg, Pa.

244 **PUMPING ENGINES.**

American Steam Pump Co., Battle Creek, Mich.
Barr Pump Co., Germantown, Philadelphia, Pa.
Blake, George F., Mfg. Co., 114 Liberty St., New York.
Bovaird & Seyfang Mfg. Co., 34 Davis St., Bradford, Pa.
Cameron, A. S., Steam Pump Works, 433 E. 23d St., New York.
Davidson, M. T., 43-53 Keap St., Brooklyn, N. Y.
Dean Bros. Steam Works, 10th St. & Senate Ave., Indianapolis, Ind.
Deane Steam Pump Co., Holyoke, Mass.
Deming Co., Salem, O.
Fairbanks, Morse Co., 172 Franklin St., Chicago, Ill.
Filler & Stowell Co., Ltd., Milwaukee, Wis.
Foster Pump Works, 36 Bridge St., Brooklyn, N. Y.
Harrisburg Foundry & Machine Co., Harrisburg, Pa.
Heisler Pumping Engine Co., Erie, Pa.
Holly Mfg. Co., Lockport, N. Y.
Knowles Steam Pump Works, 114 Liberty St., New York.
Laidlaw-Dunn-Gordon Co., 114 Liberty St., New York.
Mietz, August, 128 Mott St., New York.
Murray Iron Works Co., Burlington, Iowa.
Rarig Engineering Co., Columbus, O.
Snow Steam Pump Works, 114 Liberty St., New York.
Southwark Foundry & Machine Co., 430 Washington Ave., Philadelphia, Pa.
Weimer Machine Works Co., Lebanon, Pa.
Wood, R. D., & Co., 400 Chestnut St., Philadelphia, Pa.
Worthington, Henry R., 114 Liberty St., New York.

245 **Hot Air.**

American Machine Co., Wilmington, Del.
American Steam Pump Co., Battle Creek, Mich.
Rider-Ericcson Engine Co., 35 Warren St., New York.

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246 PUMPS.

247 **ACID.** See 299, Power Pumps; also 304, Steam Pumps.

248 **ADMIRALTY.** See 288, Marine Pumps.

249 **AEROPHER.** For vaporizing the atmosphere in cotton and woolen mills.

Blake, Geo., F., Mfg. Co., 114 Liberty St., New York.
Deane Steam Pump Co., Holyoke, Mass.
Knowles Steam Pump Works, 114 Liberty St., New York.

250 **AIR.** See also 299, Power Pumps; and 304, Steam Pumps.

American Steam Pump Co., Battle Creek, Mich.
Barr Pump Co., Germantown, Philadelphia, Pa.
Blake, George F., Mfg. Co., 114 Liberty St., New York.
Clayton Air Compressor Works, 114 Liberty St., New York.
Cameron, A. S., Steam Pump Works, 433 East 23d St., N. Y.
Davidson, M. T., 43-53 Keap St., Brooklyn, N. Y.
Dean Bros. Steam Pump Works, 10th St. & Senate Ave., Indianapolis, Ind.
Deane Steam Pump Co., Holyoke, Mass.
Fairbanks, Morse & Co., 172 Franklin St., Chicago, Ill.
Gould & Garrison, 457 Kent Ave., Brooklyn, N. Y.
Goulds Mfg. Co., Seneca Falls, N. Y.
Ingersoll-Sergeant Drill Co., 26 Cortlandt St., New York.
Knowles Steam Pump Works, 114 Liberty St., New York.
Laidlaw-Dunn-Gordon Co., 114 Liberty St., New York.
McKiernan Drill Co., 170 B'way, New York.
Morse, Andrew J., & Son, 138 Congress St., Boston, Mass.
Perkes, Charles, 627 Arch St., Philadelphia, Pa.
Rand Drill Co., 128 Broadway, New York.
Reliance Machine & Tool Works, 3323 Franklin Ave., St. Louis, Mo.
Southwark Foundry & Machine Co., 430 Washington Av., Philadelphia, Pa
Snow Steam Pump Works, 114 Liberty St., New York.
Vilter Mfg. Co., Milwaukee, Wis.
Wheeler Condenser & Engineering Co., 42 Broadway, N. Y.
Worthington. Henry R., 114 Liberty St., New York.

251 **AMMONIA.** For pumping ammonia gas; used in the manufacture of ice.

American Steam Pump Co., Battle Creek, Mich.
Blake, Geo. F., Mfg. Co., 114 Liberty St., New York.
Cameron, A. S., Steam Pump Works, 433 E. 23d St., New York.
Davidson, M. T., 43-45 Keap St., Brooklyn, N. Y.
Dean Bros. Steam Pump Works, 10th St. and Senate Ave., Indianapolis, Ind.
Deane Steam Pump Co., Holyoke, Mass.
Foster Pump Works, 36 Bridge St., Brooklyn, N. Y.
Frick Co., Waynesboro, Pa.
Gardner Governor Co., Quincy, Ill.
Goulds Mfg. Co., Seneca Falls, N. Y.
Guild & Garrison, 457 Kent Avenue, Brooklyn, N. Y.
Hall Steam Pump Co., Allegheny, Pa.
Hooker Steam Pump Co., St. Louis, Mo.
Knowles Steam Pump Works, 114 Liberty St., New York.
Laidlaw-Dunn-Gordon Co., 114 Liberty St., New York.
Murray Iron Works Co., Burlington, Ia.
National Fdry. & Machine Co., Louisville, Ky.
Pulling, James G., & Co., Columbus, O.

AMMONIA PUMPS, continued.

Pulsometer Steam Pump Co., 135 Greenwich St., New York.
Rumsey & Co., Ltd., Seneca Falls, N. Y.
Snider-Hughes Co., Cleveland, O.
Snow Steam Pump Works, 114 Liberty St., New York.
Springfield Elevator & Pump Co., Springfield, Mass.
Stilwell-Bierce & Smith-Vaile Co., Dayton, O.
Vilter Mfg. Co., Milwaukee, Wis.
Worthington, Henry R., 114 Liberty St., New York.

252 ARTESIAN AND DEEP WELL.

American Steam Pump Co., Battle Creek, Mich.
Blake, George F., Mfg. Co., 114 Liberty St., New York.
Bovaird & Seyfang Mfg. Co., 34 Davis St., Bradford, Pa.
Davidson, M. T., 43-53 Keap St., Brooklyn, N. Y.
Mietz, August, 128 Mott St., New York.
American Steam Pump Co., Battle Creek, Mich.
Cook, A. D., Lawrenceburg, Ind.
Cameron, A. S., Steam Pump Works, 433 East 23d St., N. Y.
Dean Bros. Steam Pump Works, 10th St. & Senate Ave., Indianapolis, Ind.
Deane Steam Pump Co., Holyoke, Mass.
Darling Pump and Mfg. Co., Williamsport, Pa.
Deming Co., Salem, O.
Downie Pump Co., Downieville, Pa.
Fairbanks, Morse & Co., 172 Franklin St., Chicago, Ill.
Foster Pump Works, 36 Bridge St., Brooklyn, N. Y.
Goulds Mfg. Co., Seneca Falls, N. Y.
Humphryes Mfg. Co., Mansfield, O.
Knowles Steam Pump Works, 114 Liberty St., New York.
Laidlaw-Dunn-Gordon Co., 114 Liberty St., New York.
McGowan, John H., Co., Cincinnati, O.
Myers, F. E., Co., Ashland, O.
Pierce Well Engineering & Supply Co., 136 Liberty St., N. Y.
Pulling, Jas. G., & Co., Columbus, O.
Reliance Machine & Tool Works, 3323 Franklin Ave., St. Louis, Mo.
Union Steam Pump Co., Battle Creek, Mich.

253 AUTOMATIC PUMPS AND RECEIVERS. For returning the condensation from heating and drying systems to boilers.

Acton, John, 118 John St., Brooklyn, N. Y.
Albany Steam Trap Co., Albany, N. Y.
American Steam Pump Co., Battle Creek, Mich.
Blake, Geo. F., Pump Works, 114 Liberty St., New York.
Barr Pump Co., Germantown, Philadelphia, Pa.
Blakeslee Manufacturing Co., Du Quoin, Ill.
Buffalo Steam Pump Co., North Tonawanda, N. Y.
Burdett-Rowntree Mfg. Co., 85-87 W. Jackson Blvd., Chicago.
Cameron, A. S., Steam Pump Works, 433 East 23d St., N. Y.
Canton Pump Co., Canton, O.
Cleveland Faucet Co., 15 Frankfort St., Cleveland, O.
Davidson, M. T., 43-53 Keap St., Brooklyn, N. Y.
Dean Bros. Steam Pump Works, 10th St. and Senate Ave., Indianapolis, Ind.
Deane Steam Pump Co. Holyoke, Mass.
Epping-Carpenter Co., 2410 Penn Ave., Pittsburg, Pa.

AUTOMATIC PUMPS AND RECEIVERS, continued.

Fairbanks Co., Broome & Elm Sts., New York.
Fairbanks, Morse & Co., 172 Franklin St., Chicago, Ill.
Foster Pump Works, 36 Bridge St., Brooklyn, N. Y.
Gardner Governor Co., Quincy, Ill.
Goulds Mfg. Co., Seneca Falls, N. Y.
Hall Steam Pump Co., Allegheny, Pa.
Hooker Steam Pump Co., St. Louis, Mo.
Knowles Steam Pump Works, 114 Liberty St., New York.
Laidlaw-Dunn-Gordon Co., 114 Liberty St., New York.
McGowan, John H., Co., Cincinnati, O.
Manistee Iron Works Co., Manistee, Mich.
Pulling, James G., & Co., Columbus, O.
Snider-Hughes Co., Cleveland, O.
Snow Steam Pump Works, 114 Liberty St., New York.
Stilwell-Bierce & Smith-Vaile Co., Dayton, O.
Union Steam Pump Co., Battle Creek, Mich.
Warren Steam Pump Co., Warren, Mass.
Wilson-Snyder Mfg. Co., Ross & Water Sts., Pittsburg, Pa.
Worthington, Henry R., 114 Liberty St., New York.

254 **BALLAST.** See 288, Marine Pumps.

255 **BOILER FEED.** See 299, Power Pumps; also 304, Steam Pumps.

256 **BREWERY.** See 304, Steam Pumps.

257 **CENTRIFUGAL.** Which operate by the centrifugal action of revolving blades in a case.

Allis-Chalmers Co., New York Life Bldg., Chicago, Ill.
American Well Works, Aurora, Ill.
Barnes Mfg. Co., Mansfield, O.
Bath Iron Works, Bath, Me.
Beloit Iron Works, Beloit, Wis.
Black-Clawson Co., Hamilton, O.
Boggs & Clarke, 535 S. Clinton St., Syracuse, N. Y
Brownville Iron Works, Brownville, N. Y.
Bucyrus Co., South Milwaukee, Wis.
Craft, Jesse, 260 Front St., New York.
Cross, E. M., Berlin, N. H.
Deane Steam Pump Co., Holyoke, Mass.
Deming Co., Salem, O.
Dobbie Foundry & Machine Co., Niagara Falls, N. Y.
Douglas, W. & B., Middletown, Conn.
Downington Mfg. Co., Ltd., East Downington, Pa.
Edwards, Joseph, & Co., 412 Water St., New York.
Erie Pump & Engine Co., Erie, Pa.
Fairbanks Co., Broome and Elm Sts., New York.
Fairbanks, Morse & Co., 172 Franklin St., Chicago, Ill.
Freeman Foundry & Machine Works, Joplin, Mo.
Frenier, J. H., Rutland, Vt.
Goulds Mfg. Co., Seneca Falls, N. Y.
Hooker Steam Pump Co., St. Louis, Mo.
Howell, R. R., & Co., Minneapolis, Minn.
Humphryes Mfg. Co., Mansfield, O.
Ingersoll-Sergeant Drill Co., 26 Cortlandt St., New York.
Jackson, Byron, San Francisco, Cal.

CENTRIFUGAL PUMPS, continued.

Kansas City Hay Press Co., Kansas City, Mo.
Kingsford Foundry & Machine Works, Oswego, N. Y.
Krogh Mfg. Co., San Francisco, Cal.
Laidlaw-Dunn-Gordon Co., 114 Liberty St., New York.
Lake City Engineering Co., Erie, Pa.
Lance, Geo. A., Watertown, N. Y.
Lawrence Machine Co., Lawrence, Mass.
Maslin, John, & Son, 163 First St., Jersey City, N. J.
McGowan, John H., Co., Cincinnati, O.
Mietz, August, 128 Mott St., New York.
Moore & White Co., 15th St. & Lehigh Ave., Philadelphia, Pa.
Morris Machine Works, Baldwinsville, N. Y.
Mundy, J. S., 22 Prospect St., Newark, N. J.
Nevin & Wetmore Iron Works, Lowville, N. Y.
Pulling, James G., & Co., Columbus, O.
Pusey & Jones Co., Wilmington, Del.
Quimby, Wm. E., Inc., 86 Liberty St., New York.
Risdon Iron & Locomotive Works, San Francisco, Cal.
San Francisco Tool Works, San Francisco, Cal.
Southwark Foundry & Machine Co., 430 Washington Ave., Philadelphia, Pa.
Trevor Mfg. Co., Lockport, N. Y.
Union Mfg. Co., New Britain, Conn.
United States Pump & Supply Co., Toledo, O.
Van Wie, Irvin, Syracuse, N. Y.
Wilbraham-Green Blower Co., 2518 Frankford Ave., Philda.
Williams, White & Co., Moline, Ill.
Wood, R. D., & Co., 400 Chestnut St., Philadelphia, Pa.
Worthington, Henry R., 114 Liberty St., New York.

258 High Duty.

Allis-Chalmers Co., New York Life Bldg., Chicago, Ill.
Boggs & Clarke, 535 S. Clinton St., Syracuse, N. Y.
Cameron, A. S., Steam Pump Works, 433 E. 23d St., N. Y.
Foster Pump Works, 36 Bridge St., Brooklyn, N. Y.
Goulds Mfg. Co., Seneca Falls, N. Y.
Jackson, Byron, San Francisco, Cal.
Kingsford Foundry & Machine Works, Oswego, N. Y.
Lawrence Machine Co., Lawrence, Mass.
Morris Machine Works, Baldwinsville, N. Y.
Southwark Foundry & Machine Co., 430 Washington Ave., Philadelphia, Pa.
Wood, R. D., & Co., 400 Chestnut St., Philadelphia, Pa.
Worthington, Henry R., 114 Liberty St., New York.

259 Horizontal.

Carlin's, Thos., Sons Co., Allegheny, Pa.
Boggs & Clarke, 535 S. Clinton St., Syracuse, N. Y.
Cameron, A. S., Steam Pump Works, 433 E. 23d St., N. Y.
Erie Pump & Engine Co., Erie, Pa.
Eureka Bark Mill Co., Lancaster, Pa.
Fairbanks Co., Broome & Elm Sts., New York.
Goulds Mfg. Co., Seneca Falls, N. Y.
Humphryes Mfg. Co., Mansfield, O.
Jackson, Byron, San Francisco, Cal.

CENTRIFUGAL PUMPS, HORIZONTAL, continued.

Kingsford Foundry & Machine Works, Oswego, N. Y.
Lawrence Machine Co., Lawrence, Mass.
Morris Machine Works, Baldwinsville, N. Y.
McGowan, John H., Co., Cincinnati, O.
Mietz, August, 128 Mott St., New York.
Pulling, James G., & Co., Columbus, O.
Rumsey & Co., Ltd., Seneca Falls, N. Y.
Southwark Foundry & Machine Co., 430 Washington Av., Philadelphia, Pa.
Stilwell-Bierce & Smith-Vaile Co., Dayton, O.
United States Pump & Supply Co., Toledo, O.
Wood, R. D., & Co., 400 Chestnut St., Philadelphia, Pa.
Worthington, Henry R., 114 Liberty St., New York.

260 **Phosphate Dredging.**

Boggs & Clarke, 535 S. Clinton St., Syracuse, N. Y.
Challenge Windmill & Feed Mill Co., Batavia, Ill.
Erie Pump & Engine Co., Erie, Pa.
Goulds Mfg. Co., Seneca Falls, N. Y.
Kansas City Hay Press Co., Kansas City, Mo.
Kingsford Foundry & Machine Works, Oswego, N. Y.
Morris Machine Works, Baldwinsville, N. Y.
Van Wie, Irvin, Syracuse, N. Y.
Wood, R. D., & Co., 400 Chestnut St., Philadelphia, Pa.
Worthington, Henry R., 114 Liberty St., New York.

261 **Vertical.**

Allis-Chalmers Co., New York Life Bldg., Chicago, Ill.
Bath Iron Works, Bath, Me.
Boggs & Clarke, 535 S. Clinton St., Syracuse, N. Y.
Cameron, A. S., Steam Pump Works, 433 E. 23d St., N. Y.
Carlin's, Thos., Sons Co., Allegheny, Pa.
Douglas, W. & B., Middletown, Conn.
Erie Pump & Engine Co., Erie, Pa.
Goulds Mfg. Co., Seneca Falls, N. Y.
Humphryes Mfg. Co., Mansfield, O.
Jackson, Byron, San Francisco, Cal.
Kingsford Foundry & Machine Works, Oswego, N. Y.
Lawrence Machine Co., Lawrence, Mass.
McGowan, John H., Co., Cincinnati, O.
Mietz, August, 128 Mott St., New York.
Morris Machine Works, Baldwinsville, N. Y.
Pulling, James G., & Co., Columbus, O.
Rumsey & Co., Ltd., Seneca Falls, N. Y.
United States Pump & Supply Co., Toledo, O.
Wood, R. D., & Co., 400 Chestnut St., Philadelphia, Pa.
Worthington, Henry R., 114 Liberty St., New York.

262 **CHAIN.** See 278, Hand Pumps.

263 **CIRCULATING.** See 257, Centrifugal Pumps; 299, Power Pumps; also 304, Steam Pumps.

264 **CISTERN.** See 278, Hand Pumps.

265 **CONDENSATION.** See 304, Steam Pumps.

266 **CREAMERY.** See 304, Steam Pumps.

267 **DIRECT ACTING.** See 299, Power Pumps; also 304, Steam Pumps.

268 **DISTILLERY.** See 304, Steam Pumps.

269 **DREDGING.** See 299, Power Pumps; also 304, Steam Pumps.

270 **DRIP.** See 304, Steam Pumps.

271 **ELECTRIC.** Driven by belt, or directly connected to an electric motor. See also 299, Power Pumps.

Allentown Rolling Mills, Allentown, Pa.
Allis-Chalmers Co., New York Life Bldg., Chicago, Ill.
American Fire Engine Co., Seneca Falls, N. Y.
Bernard, E. G., Co., Troy, N. Y.
Blake, Geo. F., Mfg. Co., 114 Liberty St., New York.
Boggs & Clarke, 535 S. Clinton St., Syracuse, N. Y.
Davidson, M. T., 43-53 Keap St., Brooklyn, N. Y.
Davis, I. B., & Son, Hartford, Conn.
Dean Bros. Steam Pump Works, 10th St. & Senate Ave., Indianapolis, Ind.
Deane Steam Pump Co., Holyoke, Mass.
Deming Co., Salem, O.
Douglas, W. & B., Middletown, Conn.
Dow, Geo. E., Pumping Engine Co., 179 1st St., San Francisco, Cal.
Erwin & Co., 35 N. Canal St., Chicago, Ill.
Foster Pump Works, 36 Bridge St., Brooklyn, N. Y.
General Electric Co., Schenectady, N. Y.
Goulds Mfg. Co., Seneca Falls, N. Y.
Hall Steam Pump Co., Allegheny, Pa.
Holly Mfg. Co., Lockport, N. Y.
Jackson, Byron, San Francisco, Cal.
Jeanesville Iron Works Co., Jeanesville, Pa.
Jeffrey Mfg. Co., Columbus, O.
Kelley, Benj. F., & Son, 91 Liberty St., New York.
Knowles Steam Pump Works, 114 Liberty St., New York.
Laidlaw-Dunn-Gordon Co., 114 Liberty St., New York.
Lawrence Machine Co., Lawrence, Mass.
Lucas, C. O., & Co., Greenville, O.
McGowan, J. H., Co., Cincinnati, O.
New York Air Brake Co., 66 Broadway, New York.
Pulling, James G., & Co., Columbus, O.
Quimby, Wm. E., Inc., 86 Liberty St., New York.
Quincy Engine Works, Quincy, Ill.
Rumsey & Co., Ltd., Seneca Falls, N. Y.
Stearns-Roger Mfg. Co., Denver, Col.
Stilwell-Bierce & Smith-Vaile Co., Dayton, O.
Taber Pump Co., Buffalo, N. Y.
Van Wie, Irvin, Syracuse, N. Y.
Wood, R. D., & Co., 400 Chestnut St., Philadelphia, Pa.
Worthington, Henry R., 114 Liberty St., New York.

272 **ELEVATOR.** See also 304, Steam Pumps.

American Steam Pump Co., Battle Creek, Mich.
Barr Pump Co., Germantown, Philadelphia, Pa.
Blake, Geo. F., Mfg. Co., 114 Liberty St., New York.
Bliss, E. W., Co., 17 Adams St., Brooklyn, N. Y.
Buffalo Steam Pump Co., North Tonawanda, N. Y.

ELEVATOR PUMPS, continued.

Burdett-Rowntree Mfg. Co., 85-87 W. Jackson Blvd., Chicago.
Cameron, A. S., Steam Pump Works, 433 E. 23d St., New York.
Canton Pump Co., Canton, O.
Davidson, M. T., 45-53 Keap St., Brooklyn, N. Y.
Dean Bros. Steam Pump Works, 10th St. & Senate Ave., Indianapolis, Ind.
Deane Steam Pump Co., Holyoke, Mass.
Dow, Geo. E., Pumping Engine Co., 179 First St., San Francisco, Cal.
Epping-Carpenter Co., 2410 Penn Ave., Pittsburg, Pa.
Fairbanks, Morse & Co., 172 Franklin St., Chicago, Ill.
Fort Scott Foundry & Machine Co., Fort Scott, Kan.
Gardner Governor Co., Quincy, Ill.
Goulds Mfg. Co., Seneca Falls, N. Y.
Grant Iron Works, Mahanoy City, Pa.
Hall Steam Pump Co., Allegheny, Pa.
Hooker Steam Pump Co., St. Louis, Mo.
Jeanesville Iron Works Co., Jeanesville, Pa.
Knowles Steam Pump Works, 114 Liberty St., New York.
Laidlaw-Dunn-Gordon Co., 114 Liberty St., New York.
Lucas, C. O., & Co., Greenville, O.
McGowan, John H., Co., Cincinnati, O.
Manistee Iron Works Co., Manistee, Mich.
Pulling, James G., & Co., Columbus, O.
Quimby, Wm. E., Inc., 86 Liberty St., New York.
Rumsey & Co., Ltd., Seneca Falls, N. Y.
St. Joseph Pump & Mfg. Co., St. Joseph, Mo.
Snider-Hughes Co., Cleveland, O.
Snow Steam Pump Works, 114 Liberty St., New York.
Springfield Elevator & Pump Co., Springfield, Mass.
Stilwell-Bierce & Smith-Vaile Co., Dayton, O.
Union Steam Pump Co., Battle Creek, Mich.
Van Wie, Irvin, Syracuse, N. Y.
Warren Steam Pump Co., Warren, Mass.
Worthington, Henry R., 114 Liberty St., New York.

273 **FILTER PRESS.** See 304, Steam Pumps.

274 **FIRE.** See 299, Power Pumps; also 304, Steam Pumps.

275 **FORCE.** See 299, Power Pumps.

276 **GEARED.** See 299, Power Pumps.

277 **GROUTING.** See 278, Hand Pumps.

278 **HAND.** For general purposes where power is not available.

Althouse-Wheeler Co., Waupun, Wis.
American Pump & Supply Co., Toledo, O.
Austin Mfg. Co., Manhattan Bldg., Chicago, Ill.
Barnes Mfg. Co., Mansfield, O.
Belfield, H., & Co., 435 N. Broad St., Philadelphia, Pa.
Berger Mfg. Co., Canton, O.
Biggs, B. F., Pump Co., Lafayette, Ind.
Blake, Geo. F., Mfg. Co., 114 Liberty St., New York.
Boston & Lockport Block Co., 160 Commercial St., Boston.
Buescher Mfg. Co., Elkhart, Ind.
Buhl Malleable Co., Adair & Wight Sts., Detroit, Mich.
Cameron, A. S., Steam Pump Works, 433 E. 23d St., N. Y.

HAND PUMPS, continued

Canton Pump Co., Canton, O.
Cardwell Machine Co., Richmond, Va.
Challenge Windmill & Feed Mill Co., Batavia, Ill.
Clark Bros., Belmont, N. Y.
Clayton Air Compressor Works, 114 Liberty St., New York.
Cleveland Faucet Co., 15 Frankfort St., Cleveland, O.
Cleveland Galvanizing Works, Cleveland, O.
Columbiana Pump Co., Columbiana, O.
Comstock & Coonse Co., Indianapolis, Ind.
Darling Pump & Mfg. Co., Williamsport, Pa.
Davidson, M. T., 43-53 Keap St., Brooklyn, N. Y.
Dean Bros. Steam Pump Works, 10th St. & Senate Ave., Indianapolis, Ind.
Deane Steam Pump Co., Holyoke, Mass.
Deming Co., Salem, O.
Dempster Mill Mfg. Co., Beatrice, Neb.
Diamond Drill & Machine Co., Birdsboro, Pa.
Douglas, W. & B., Middletown, Conn.
Dow, Geo. E., Pumping Engine Co., 179 First St., San Francisco, Cal.
Edson Mfg. Co., 132 Commercial St., Boston, Mass.
Ehrsam, J. B., & Sons Mfg. Co., Enterprise, Kan.
Erwin & Co., 35 N. Canal St., Chicago, Ill.
Flint & Walling Mfg. Co., Kendallville, Ind.
Foster Pump Works, 36 Bridge St., Brooklyn, N. Y.
Goulds Mfg. Co., Seneca Falls, N. Y. *See adv. page 13.*
Grant Iron Works, Mahanoy City, Pa.
Hall Steam Pump Co., Allegheny, Pa.
Haydenville Co., Haydenville, Mass.
Hayes Pump & Planter Co., Galva, Ill.
Hess-Snyder Co., Massillon, O.
Hill Machine Co., Anderson, Ind.
Hoes, Robert, Malden Bridge, N. Y.
Hoile Mfg. Co., Buffalo, N. Y.
Howell, R. R., & Co., Minneapolis, Minn.
Humphryes Mfg. Co., Mansfield, O.
Hurst, H. L., Mfg. & Supply Co., Canton, O.
I. X. L. & Goshen Pump Co., Goshen, Ind.
Illinois Malleable Iron Co., 30 W. Monroe St., Chicago, Ill.
Jackson, Byron, San Francisco, Cal.
Kingsford Foundry & Machine Works, Oswego, N. Y.
Knapp Mfg. Co., 24 Frankfort St., New York.
Knowles Steam Pump Works, 114 Liberty St., New York.
Laidlaw-Dunn-Gordon Co., 114 Liberty St., New York.
Lake City Engineering Co., Erie, Pa.
McDonald, A. Y., & Morrison Mfg. Co., Dubuque, Ia.
McGowan, John H., Co., Cincinnati, O.
Mast Foos Co., Springfield, O.
Maud S. Windmill & Pump Co., Lansing, Mich.
Moline Pump Co., Moline, Ill.
Myers, F. E., & Bro., Ashland, O.
National Foundry & Machine Co., Louisville, Ky.
Perkes, Chas., 627 Arch St., Philadelphia, Pa.
Perkins Wind Mill & Axe Co., Mishawaka, Ind.
Pierce Well Engineering & Supply Co., 136 Liberty St., N. Y.
Porter, J. E., Co., Ottawa, Ill.
Red Cross Mfg. Co., Bluffton, Ind.

HAND PUMPS, continued.

Red Jacket Mfg. Co., Davenport, Ia.
Reynolds, M., Plumbers' Supply Co., 25 Centre St., New York.
Rumsey & Co., Ltd., Seneca Falls, N. Y.
St. Joseph Pump & Mfg. Co., St. Joseph, Mo.
Sands, Alfred B., & Son, 134 Beekman St., New York.
Springfield Elevator & Pump Co., Springfield, Mass.
Stilwell-Bierce & Smith-Vaile Co., Dayton, O.
Taber Pump Co., Buffalo, N. Y.
Temple Pump Co., 16-28 W. 15th St., Chicago, Ill.
Thomas Mfg. Co., Springfield, O.
Trahern Pump Co., Rockford, Ill.
Union Mfg. Co., New Britain, Conn.
United States Pump & Supply Co., Toledo, O.
U. S. Wind Engine & Pump Co., Batavia, Ill.
Van Duzen, E. W., Co., Cincinnati, O.
Van Wie, Irvin, Syracuse, N. Y.
Warren Steam Pump Co., Warren, Mass.
Waterbury Farrel Foundry & Machine Co., Waterbury, Conn.
Watson-Stillman Co., 46 Dey St., New York.
Weiman Machine Works, Columbus, O.
Wilder, Sydney & Co., Holliston, Mass.
Wilson-Snyder Mfg. Co., Ross & Water Sts., Pittsburg, Pa.
Woodmanse & Hewitt Mfg. Co., Freeport, Ill.
Wyckoff, A., & Son, Elmira, N. Y.
Zimmerman Mfg. Co., Auburn, Ind.

279 **Beer and Ale.** For use in raising liquors; operated by hand.

Bishop & Babcock Co., Hamilton & Kirtland Sts., Cleveland, O.
Chambers & Ainslie, Newark, N. J.
Cleveland Faucet Co., 15 Frankfort St., Cleveland, O.
Cox Brass Mfg. Co., Ltd., Albany, N. Y.
Deane Steam Pump Co., Holyoke, Mass.
Douglas, W. & B., Middletown, Conn.
Goulds Mfg. Co., Seneca Falls, N. Y.
Grant Iron Works, Mahanoy City, Pa.
Haydenville Co., Haydenville, Mass.
Hooker Steam Pump Co., St. Louis, Mo.
Humphryes Mfg. Co., Mansfield, O.
Hydro-Pneumatic Pump Co., 101 Walker St., New York.
Laidlaw-Dunn-Gordon Co., 114 Liberty St., New York.
Liquid Carbonic Co., Michigan & Wells Sts., Chicago, Ill.
Peck Bros. & Co., New Haven, Conn.
Rumsey & Co., Ltd., Seneca Falls, N. Y.
Snow Steam Pump Works, 114 Liberty St., New York.
Strater, Herman, & Sons, 74 Sudbury St., Boston, Mass.
Taber Pump Co., Buffalo, N. Y.
Toombs, Samuel, 10 Peck St., New York.
Union Mfg. Co., New Britain, Conn.
Union Steam Pump Co., Battle Creek, Mich.
Vilter Mfg. Co., Milwaukee, Wis.
Weiman Machine Works, Columbus, O.
Worthington, Henry R., 114 Liberty St., New York.

280 **Diaphragm.** Used by contractors in general construction work and operated by hand.

Barnes Mfg. Co., Mansfield, O.
Boston & Lockport Block Co., 160 Commercial St., Boston.

HAND DIAPHRAGM PUMPS, continued.

Douglas, W. & B., Middletown, Conn.
Edson Mfg. Co., 132 Commercial St., Boston, Mass.
Goulds Mfg. Co., Seneca Falls, N. Y.
Humphryes Mfg. Co., Mansfield, O.
Rumsey & Co., Ltd., Seneca Falls, N. Y.
Stilwell-Bierce & Smith-Vaile Co., Dayton, O.
Union Hardware Co., Torrington, Conn.

281 **Painters' Oil.**

Foster Pump Works, 36 Bridge St., Brooklyn, N. Y.
Goulds Mfg. Co., Seneca Falls, N. Y.
Reilley Bros., 322 W. 41st St., New York.

282 **Porcelain Lined.**

Barnes Mfg. Co., Mansfield, O.
Bushnell Pump Co., Bushnell, Ill.
Douglas, W. & B., Middletown, Conn.
Goulds Mfg. Co., Seneca Falls, N. Y.
Humphryes Mfg. Co., Mansfield, O.
I. X. L. & Goshen Pump Co., Goshen, Ind.
Morris Machine Works, Baldwinsville, N. Y.
Temple Pump Co., 16-28 W. 15th Pl., Chicago, Ill.
U. S. Wind Engine & Pump Co., Batavia, Ill.

283 **Siphon.** See also 57, Ejectors.

Barnes Mfg. Co., Mansfield, O.
Belfield, H., & Co., 435 N. Broad St., Philadelphia, Pa.
Fairbanks Co., Broome & Elm Sts., New York.
Fowler, Frank, Louisville, Ky.
Goulds Mfg. Co., Seneca Falls, N. Y.
Humphryes Mfg. Co., Mansfield, O.
Lang's, John S., Son & Co., 4 Fletcher St., New York.
Myers, F. E., & Bro., Ashland, O.
Nason Mfg. Co., 71 Fulton St., New York.
Van Duzen, E. W., Co., Cincinnati, O.

284 **Wooden.** For use on farms.

Biggs, B. F., Pump Co., Lafayette, Ind.
Cedar Rapids Pump Co., Cedar Rapids, Ia.
Decatur Lumber & Mfg. Co., Decatur, Ill.
Dempster Mill Mfg. Co., Beatrice, Neb.
Howard & Jennings, Syracuse, N. Y.
I. X. L. & Goshen Pump Co., Goshen, Ind.
McDonald, A. Y., & Morrison Mfg. Co., Dubuque, Ia.
Moline Pump Co., Moline, Ill.
Nelson, N. O., Mfg. Co., 8th & St. Charles Sts., St. Louis, Mo.
St. Joseph Pump & Mfg. Co., St. Joseph, Mo.
Temple Pump Co., 16-28 W. 15th Pl., Chicago, Ill.
Trahern Pump Co., Rockford, Ill.
U. S. Wind Engine & Pump Co., Batavia, Ill.

285 **HORIZONTAL.** See 278, Hand Pumps; also 299, Power Pumps; also 304, Steam Pumps.

286 **HOUSE.** See 278, Hand Pumps.

287 **MANHOLE.** See 280, Diaphragm Pumps.

288 MARINE. For use on steamships, etc.

Advance Pump & Compressor Co., Battle Creek, Mich.
American Steam Pump Co., Battle Creek, Mich.
Barnes Mfg. Co., Mansfield, O.
Blake, Geo. F., Mfg. Co., 114 Liberty St., New York.
Blakeslee Mfg. Co., Du Quoin, Ill.
Boston & Lockport Block Co., 160 Commercial St., Boston.
Buffalo Steam Pump Co., North Tonawanda, N. Y.
Cameron, A. S., Steam Pump Works, 433 E. 23d St., N. Y.
Canton Pump Co., Canton, O.
Davidson, M. T., 43-53 Keap St., Brooklyn, N. Y.
Dean Bros. Steam Pump Works, 10th St. & Senate Ave., Indianapolis, Ind.
Deane Steam Pump Co., Holyoke, Mass.
Deming Co., Salem, O.
Douglas, W. & B., Middletown, Conn.
Dow, Geo. E., Pumping Engine Co., 179 First St., San Francisco, Cal.
Edson Mfg. Co., 132 Commercial St., Boston, Mass.
Epping-Carpenter Co., 2410 Penn Ave., Pittsburg, Pa.
Erie Pump & Engine Co., Erie, Pa.
Fairbanks, Morse & Co., Chicago, Ill.
Foster Pump Works, 36 Bridge St., Brooklyn, N. Y.
Goulds Mfg. Co., Seneca Falls, N. Y.
Hall Steam Pump Co., Allegheny, Pa.
Hooker Steam Pump Co., St. Louis, Mo.
Humphryes Mfg. Co., Mansfield, O.
Kingsford Foundry & Machine Works, Oswego, N. Y.
Knowles Steam Pump Works, 114 Liberty St., New York.
La France Fire Engine Co., Elmira, N. Y.
Laidlaw-Dunn-Gordon Co., 114 Liberty St., New York.
McGowan, John H., Co., Cincinnati, O.
Manistee Iron Works Co., Manistee, Mich.
Morris Machine Works, Baldwinsville, N. Y.
Myers, F. E., & Bro., Ashland, O.
Russell, Albert & Sons, Newburyport, Mass.
Snider-Hughes Co., Cleveland, O.
Snow Steam Pump Works, 114 Liberty St., New York.
Stilwell-Bierce & Smith-Vaile Co., Dayton, O.
Union Mfg. Co., New Britain, Conn.
Union Steam Pump Co., Battle Creek, Mich.
Van Wie, Irvin, Syracuse, N. Y.
Wilson-Snyder Mfg. Co., Ross & Water Sts., Pittsburg, Pa.
Wood, R. D., & Co., 400 Chestnut St., Philadelphia, Pa.
Worthington, Henry R., 114 Liberty St., New York.

289 Bilge.

Abendroth & Root Mfg. Co., 99 John St., New York.
Barnes Mfg. Co., Mansfield, O.
Blake, Geo. F., Mfg. Co., 114 Liberty St., New York.
Blakeslee Mfg. Co., Du Quoin, Ill.
Cameron, A. S., Steam Pump Works, 433 East 23d St., New York.
Dean Bros. Steam Pump Works, 10th St. & Senate Ave., Indianapolis, Ind.
Deane Steam Pump Co., Holyoke, Mass.
Deming Co., Salem, O.

MARINE BILGE PUMPS, continued

Detroit Pump Co., Detroit, Mich.
Douglas, W. & B., Middletown, Conn.
Edson Mfg. Co., 132 Commercial St., Boston, Mass.
Epping-Carpenter Co., 2410 Penn Ave., Pittsburg, Pa.
Flint & Walling Mfg. Co., Kendallville, Ind.
Goulds Mfg. Co., Seneca Falls, N. Y.
Hall Steam Pump Co., Allegheny, Pa.
Hayden & Derby Mfg. Co., 89 Liberty St., New York.
Haydenville Co., Haydenville, Mass.
Hooker Steam Pump Co., St. Louis, Mo.
Humphryes Mfg. Co., Mansfield, O.
Knowles Steam Pump Works, 114 Liberty St., New York.
Laidlaw-Dunn-Gordon Co., 114 Liberty St., New York.
Manistee Iron Works, Manistee, Mich.
Maslin, John, & Son, 163 First St., Jersey City, N. J.
National Foundry & Machine Co., Louisville, Ky.
Pulling, James G., & Co., Columbus, O.
Pulsometer Steam Pump Co., 135 Greenwich St., New York.
Rumsey & Co., Ltd., Seneca Falls, N. Y.
Sands, Alfred B., & Son, 134 Beekman St., New York.
Snow Steam Pump Works, 114 Liberty St., New York.
Stilwell-Bierce & Smith-Vaile Co., Dayton, O.
Van Duzen, E. W., Co., Cincinnati, O.
Van Wie, Irvin, Syracuse, N. Y.
Weiman Machine Works, Columbus, O.
Wood, R. D., & Co., 400 Chestnut St., Philadelphia, Pa.
Worthington, Henry R., 114 Liberty St., New York.

290 Duplex Vertical, Plunger Pattern.

Blake, Geo. F., Mfg. Co., 114 Liberty St., New York.
Davidson, M. T., 43-53 Keap St., Brooklyn, N. Y.
Dean Bros. Steam Pump Works, 10th St. & Senate Ave., Indianapolis, Ind.
Dow, Geo. E., Pumping Engine Co., 179 First St., San Francisco, Cal.
Knowles Steam Pump Works, 114 Liberty St., New York.
Laidlaw-Dunn-Gordon Co., 114 Liberty St., New York.
Snow Steam Pump Works, 114 Liberty St., New York.
Stewart Heater Co., Buffalo, N. Y.
Stilwell-Bierce & Smith-Vaile Co., Dayton, O.
Worthington, Henry R., 114 Liberty St., New York.

291 Fire.

American Fire Engine Co., Seneca Falls, N. Y.
American Steam Pump Co., Battle Creek, Mich.
Blake, Geo. F., Mfg. Co., 114 Liberty St., New York.
Dean Bros. Steam Pump Works, 10th St. & Senate Ave., Indianapolis, Ind.
Goulds Mfg. Co., Seneca Falls, N. Y.
Hooker Steam Pump Co., St. Louis, Mo.
Humphryes Mfg. Co., Mansfield, O.
Myers, F. E., & Bro., Ashland, O.
Rumsey & Co., Ltd., Seneca Falls, N. Y.
Snow Steam Pump Works, 114 Liberty St., New York.
Stilwell-Bierce & Smith-Vaile Co., Dayton, O.
Van Duzen, E. W., Co., Cincinnati, O.

MARINE FIRE PUMPS, continued

Weiman Machine Works, Columbus, O.
Worthington, Henry R., 114 Liberty St., New York.

292 **Ship Deck.**

Cameron, A. S., Steam Pump Works, 433 E. 23d St., N. Y.
Dean Bros. Steam Pump Works, 10th St. & Senate Ave., Indianapolis, Ind.
Deming Co., Salem, O.
Douglas, W. & B., Middletown, Conn.
Goulds Mfg. Co., Seneca Falls, N. Y.
Humphryes Mfg. Co., Mansfield, O.
Myers, F. E., & Bro., Ashland, O.
Pulsometer Steam Pump Co., 135 Greenwich St., New York.
Rumsey & Co., Ltd., Seneca Falls, N. Y.
Stilwell-Bierce & Smith-Vaile Co., Dayton, O.

293 **Vertical, Air.**

Blake, Geo. F., Mfg. Co., 114 Liberty St., New York.
Clayton Air Compressor Works, 114 Liberty St., New York.
Cameron, A. S., Steam Pump Works, 433 East 23d St., New York.
Davidson, M. T., 43-53 Keap St., Brooklyn, N. Y.
Dean Bros. Steam Pump Works, 10th St. & Senate Ave., Indianapolis, Ind.
Edson Mfg. Co., 132 Commercial St., Boston, Mass.
Foster Pump Works, 36 Bridge St., Brooklyn, N. Y.
Goulds Mfg. Co., Seneca Falls, N. Y. *See adv. page 13.*
Knowles Steam Pump Works, 114 Liberty St., New York.
Manistee Iron Works Co., Manistee, Mich.
Worthington, Henry R., 114 Liberty St., New York.

294 **Vertical, Piston.**

Blake, Geo. F., Mfg. Co., 114 Liberty St., New York.
Cameron, A. S., Steam Pump Works, 433 E. 23d St., N. Y.
Davidson, M. T., 43-53 Keap St., Brooklyn, N. Y.
Dean Bros. Steam Pump Works, 10th St. & Senate Ave., Indianapolis, Ind.
Dow, Geo. E., Pumping Engine Co., 179 First St., San Francisco, Cal.
Goulds Mfg. Co., Seneca Falls, N. Y. *See adv. page 13.*
Knowles Steam Pump Works, 114 Liberty St., New York.
Myers, F. E., & Bro., Ashland, O.
Stilwell-Bierce & Smith-Vaile Co., Dayton, O.
Van Wie, Irvin, Syracuse, N. Y.
Worthington, Henry R., 114 Liberty St., New York.

295 **MASH.** For use in distilleries.

American Steam Pump Co., Battle Creek, Mich.
Cameron, A. S., Steam Pump Works, 433 E. 23d St., N. Y.
Dean Bros. Steam Pump Works, 10th St. & Senate Ave., Indianapolis, Ind.
Laidlaw-Dunn-Gordon Co., 114 Liberty St., New York.
McGowan, J. H., Co., Cincinnati, O.
National Foundry & Machine Co., Louisville, Ky.
Pulsometer Steam Pump Co., 135 Greenwich St., New York.
Wood, R. D., & Co., 400 Chestnut St., Philadelphia, Pa.

296 MELTER PAN. For use in making sugar, molasses and syrup.

Blake, Geo. F., Mfg. Co., 114 Liberty St., New York.
Cameron, A. S., Steam Pump Works, 433 E. 23d St., N. Y.
Davidson, M. T., 43-53 Keap St., Brooklyn, N. Y.
Dean Bros. Steam Pump Works, 10th St. & Senate Ave., Indianapolis, Ind.
Deane Steam Pump Co., Holyoke, Mass.
Guild & Garrison, 457 Kent Ave., Brooklyn, N. Y.
Hall Steam Pump Co., Allegheny, Pa.
Hooker Steam Pump Co., St. Louis, Mo.
Knowles Steam Pump Works, 114 Liberty St., New York.
McGowan, John H., Co., Cincinnati, O.
Manistee Iron Works, Manistee, Mich.
Stilwell-Bierce & Smith-Vaile Co., Dayton, O.
Worthington, Henry R., 114 Liberty St., New York.

297 OIL. For pumping oil to cylinders.

Battle Creek Steam Pump Co., Battle Creek, Mich.
Belden, A. G., & Co., 145 Maiden Lane, New York.
Blakeslee Mfg. Co., Du Quoin, Ill.
Darling Pump Co., Williamsport, Pa.
Dean Bros. Steam Pump Works, 10th St. & Senate Ave., Indianapolis, Ind.
Deane Steam Pump Co., Holyoke, Mass.
Goulds Mfg. Co., Seneca Falls, N. Y.
Lonergan, J. E., & Co., 211 Race St., Philadelphia, Pa.
Powell, Wm., Co., Cincinnati, O.
Pulling, Jas. G., & Co., Columbus, O.
Rumsey & Co., Ltd., Seneca Falls, N. Y.
Sherwood Mfg. Co., Buffalo, N. Y.

298 PAPER MILL. For use in the manufacture of pulp and paper. See also 257, Centrifugal Pumps.

American Steam Pump Co., Battle Creek, Mich.
Cameron, A. S., Steam Pump Works, 433 E. 23d St., N. Y.
Carthage Machine Co., Carthage, N. Y.
Dean Bros. Steam Pump Works, 10th St. & Senate Ave., Indianapolis, Ind.
Deane Steam Pump Co., Holyoke, Mass.
Douglas, W. & B., Middletown, Conn.
Goulds Mfg. Co., Seneca Falls, N. Y. *See adv. page 13.*
Guild & Garrison, 457 Kent Ave., Brooklyn, N. Y.
Harmon Machine Co., Watertown, N. Y.
I. X. L. & Goshen Pump Co., Goshen, Ind.
Kingsford Foundry & Machine Co., Oswego, N. Y.
Knowles Steam Pump Works, 114 Liberty St., New York.
Lawrence Machine Co., Lawrence, Mass.
McGowan, John H., Co., Cincinnati, O.
Moore & White Co., 15th St. & Lehigh Ave., Philadelphia, Pa.
Perkins, B. F., & Son, Holyoke, Mass. *See adv. page 121.*
Pusey & Jones Co., Wilmington, Del.
Pulsometer Steam Pump Co., 135 Greenwich St., New York.
Sandy Hill Iron & Brass Works, Sandy Hill, N. Y.
Springfield Elevator & Pump Co., Springfield, Mass.
Stilwell-Bierce & Smith-Vaile Co., Dayton, O.
Trevor Mfg. Co., Lockport, N. Y.
Turners Falls Machine Co., Turners Falls, Mass.

PAPER MILL PUMPS, continued

Van Wie, Irvin, Syracuse, N. Y.
Wood, R. D., & Co., 400 Chestnut St., Philadelphia, Pa.
Worthington, Henry R., 114 Liberty St., New York.

299 **POWER.** For pumping water where direct acting steam pumps are not necessary, or where the power must be taken from a line shaft.

Advance Pump & Compressor Co., Battle Creek, Mich.
Albany Steam Trap Co., Albany, N. Y.
Allis-Chalmers Co., New York Life Bldg., Chicago, Ill.
American Fire Engine Co., Seneca Falls, N. Y.
American Steam Pump Co., Battle Creek, Mich.
American Well Works, Aurora, Ill.
Athol Pump Co., Athol, Mass.
Barnes Mfg. Co., Mansfield, O.
Barr Pump Co., Germantown, Philadelphia, Pa.
Belfield, H., & Co., 435 N. Broad St., Philadelphia, Pa.
Beloit Iron Works, Beloit, Wis.
Blake, Geo. F., Mfg. Co., 114 Liberty St., New York.
Blake, W. H., Steam Pump Co., Fitchburg, Mass.
Blakeslee Mfg. Co., Du Quoin, Ill.
Boggs & Clarke, 535 S. Clinton St., Syracuse, N. Y.
Bovaird & Seyfang Mfg. Co., 34 Davis St., Bradford, Pa.
Boyts, Porter & Co., Connellsville, Pa.
Bucyrus Co., South Milwaukee, Wis.
Buescher Mfg. Co., Elkhart, Ind.
Buffalo Steam Pump Co., North Tonawanda, N. Y.
Burdett-Rowntree Mfg. Co., 85-87 W. Jackson Blvd., Chicago.
Burroughs, Charles, Co., Newark, N. J.
Cameron, A. S., Steam Pump Works, 433 E. 23d St., New York.
Camp Engineering Co., 47 W. Lake St., Chicago, Ill.
Canton Pump Co., Canton, O.
Cardwell Machine Co., Richmond, Va.
Carlin's, Thos., Sons Co., Allegheny, Pa.
Challenge Windmill & Feed Mill Co., Batavia, Ill.
Charter Gas Engine Co., Sterling, Ill.
Clayton Air Compressor Works, 114 Liberty St., New York.
Cleveland Faucet Co., 15 Frankfort St., Cleveland, O.
Columbiana Pump Co., Columbiana, O.
Cook Well Co., 703 Market St., St. Louis, Mo.
Corcoran, Andrew J., 11 John St., New York.
Craft, Jesse, 260 Front St., New York.
Crawford & McCrimmon Co., Brazil, Ind.
Creamery Package Mfg. Co., 180 Kinzie St., Chicago, Ill.
Darling Pump & Mfg. Co., Williamsport, Pa.
Davidson, M. T., 43-53 Keap St., Brooklyn, N. Y.
Davis, I. B., & Son, Hartford, Conn.
Davis-Johnson Co., 47 S. Canal St., Chicago, Ill.
Dean Bros. Steam Pump Co., 10th St. & Senate Ave., Indianapolis, Ind.
Deane Steam Pump Co., Holyoke, Mass.
Delamater Iron Works, 35 Warren St., New York.
Deming Co., Salem, O.
Diamond Drill & Machine Co., Birdsboro, Pa.
Dobbie Foundry & Machine Co., Niagara Falls, N. Y.
Douglas, W. & B., Middletown, Conn.

POWER PUMPS, continued

Dow, Geo. E., Pumping Engine Co., 179 First St., San Francisco, Cal.
Downie Pump Co., Downieville, Pa.
Downington Mfg. Co., Ltd., East Downington, Pa.
Edson Mfg. Co., 132 Commercial St., Boston, Mass.
Edwards, Joseph, & Co., 412 Water St., New York.
Elgin Mfg. Co., Elgin, Ill.
Elmes, Charles F., Engineering Works, 253 Fulton St., Chicago, Ill.
Epping-Carpenter Co., 2410 Penn Ave., Pittsburg, Pa.
Erie Pump & Engine Co., Erie, Pa.
Erwin & Co., 35 N. Canal St., Chicago, Ill.
Fairbanks Co., Broome & Elm Sts., New York.
Fairbanks, Morse & Co., 172 Franklin St., Chicago, Ill.
Florence Machine Co., Florence, Mass.
Foster Pump Works, 36 Bridge St., Brooklyn, N. Y.
Frenier, J. H., Rutland, Vt.
Frick Co., Waynesboro, Pa.
Fritz, Geo. J., Foundry & Machine Co., St. Louis, Mo.
Frost Mfg. Co., Galesburg, Ill.
Gardner Governor Co., Quincy, Ill.
Gleason-Peters Air Pump Co., 20 W. Houston St., New York.
Goulds Mfg. Co., Seneca Falls, N. Y. *See adv. page 13.*
Grant Iron Works, Mahanoy City, Pa.
Great Western Mfg. Co., Leavenworth, Kan.
Guild & Garrison, 457 Kent Ave., Brooklyn, N. Y.
Hall Steam Pump Co., Allegheny, Pa.
Harris, Wm. A., Steam Engine Co., Providence, R. I.
Harrisburg Mfg. & Boiler Co., Harrisburg, Pa.
Hayes Pump & Planter Co., Galva, Ill.
Hendrick Mfg. Co., Ltd., Carbondale, Pa.
Hersey Mfg. Co., South Boston, Mass.
Hill, William E., & Co., Kalamazoo, Mich.
Hill Machine Co., Anderson, Ind.
Holly Mfg. Co., Lockport, N. Y.
Holyoke Machine Co., Holyoke, Mass.
Hooker Steam Pump Works, St. Louis, Mo.
Household Pump Co., 1237 Arch St., Philadelphia, Pa.
Howell, R. R., & Co., Minneapolis, Minn.
Humphrey Machine Co., Keene, N. H.
Humphryes Mfg. Co., Mansfield, O.
Hunt, Rodney, Machine Co., Orange, Mass.
I. X. L. & Goshen Pump Co., Goshen, Ind.
Ingersoll-Sergeant Drill Co., 26 Cortlandt St., New York.
Jackson, Byron, San Francisco, Cal.
Jeanesville Iron Works Co., Jeanesville, Pa.
Jones, E. D., & Sons, Pittsfield, Mass.
Kaestner, Chas., & Co., 241 S. Jefferson St., Chicago, Ill.
Kansas City Hay Press Co., Kansas City, Mo.
Kelley, Benjamin F., & Son, 91 Liberty St., New York. *See adv. page 14.*
Kensington Engine Works, Ltd., 245 N. Broad St., Philda.
Keystone Engine & Machine Works, 5th & Buttonwood Sts., Philadelphia, Pa.
Kingsford Foundry & Machine Works, Oswego, N. Y.
Knowles Steam Pump Works, 114 Liberty St., N. Y.
Knowlson & Kelly, Troy, N. Y.

POWER PUMPS, continued

Lackawanna Pump Works, Scranton, Pa.
La France Fire Engine Co., Elmira, N. Y.
Laidlaw-Dunn-Gordon Co., 114 Liberty St., New York.
Lake City Engineering Co., Erie, Pa.
Larzelere Machine Co., Williamsport, Pa.
Lawrence Machine Co., Lawrence, Mass.
Lindgren Mahan Fire Apparatus Works, 793 W. Lake St., Chicago, Ill.
Lucas, C. O., & Co., Greenville, O.
McDonald, A. Y., & Morrison Mfg. Co., Dubuque, Ia.
McGowan, John H., Co., Cincinnati, O.
Manistee Iron Works Co., Manistee, Mich.
Mansfield Engineering Co., Mansfield, O.
Maslin, John, & Son, 163 First St., Jersey City, N. J.
Mast, Foos Co., Springfield, O.
May Bros., Galesburg, Ill.
Mecklenburg Iron Works, Charlotte, N. C.
Mietz, August, 128 Mott St., New York.
Moline Pump Co., Moline, Ill.
Morris Machine Works, Baldwinsville, N. Y.
Morse, Andrew J., & Son, 138 Congress St., Boston, Mass.
Motter, Geo. F., & Sons, York, Pa.
Myers, F. E., & Bro., Ashland, O.
National Foundry & Machine Co., Louisville, Ky.
Nevin & Wetmore Iron Works, Lowville, N. Y.
Norwood Engineering Co., Florence, Mass.
Noye Mfg. Co., Buffalo, N. Y.
Oram, John S., 160-172 Coe St., Cleveland, O.
Patterson, Frank L., & Co., 26 Cortlandt St., New York.
Perkins Wind Mill & Axe Co., Mishawaka, Ind.
Pierce Well Engineering & Supply Co., 136 Liberty St., N. Y.
Pneumatic Engineering Co., 128 Broadway, New York.
Porter, J. E., Co., Ottawa, Ill.
Presbrey, C. H., & Co., Sterling, Ill.
Pulling, James G., & Co., Columbus, O.
Pusey & Jones Co., Wilmington, Del.
Queen City Engineering Co., Buffalo, N. Y.
Quimby, Wm. E., Inc., 86 Liberty St., New York.
Red Jacket Mfg. Co., Davenport, Ia.
Risdon Iron & Locomotive Works, San Francisco, Cal.
Roberts, Geo. J., & Co., Dayton, O.
Rock River Machine Co., Janesville, Wis.
Roots, P. H. & F. M., Connersville, Ind.
Rumsey & Co., Ltd., Seneca Falls, N. Y.
St. Joseph Pump & Mfg. Co., St. Joseph, Mo.
San Francisco Tool Works, San Francisco, Cal.
Sherman, R. R., & Co., Boston, Mass.
Smith, S. Morgan, Co., York, Pa.
Smith, Myers & Schnier Co., Cincinnati, O.
Snider-Hughes Co., Cleveland, O.
Snow Steam Pump Works, 114 Liberty St., New York.
Southwark Foundry & Machine Co., 430 Washington Ave., Philadelphia, Pa.
Spence & Rideout, Nashua, N. H.
Springfield Elevator & Pump Co., Springfield, Mass.
Stewart Heater Co., Buffalo, N. Y. *See adv. page 9.*
Stilwell-Bierce & Smith-Vaile Co., Dayton, O.

POWER PUMPS, continued

Strater, Herman, & Sons, 74 Sudbury St., Boston, Mass.
Taber Pump Co., Buffalo, N. Y.
Trahern Pump Co., Rockford, Ill.
Trevor Mfg. Co., Lockport, N. Y.
Union Iron Works, San Francisco, Cal.
Union Mfg. Co., New Britain, Conn.
Union Steam Pump Co., Battle Creek, Mich.
United States Pump & Supply Co., Toledo, O.
United States Wind Engine & Pump Co., Batavia, Ill.
Van Duzen, E. W., Co., Cincinnati, O.
Van Wie, Irvin, Syracuse, N. Y.
Ward, Charles, Charlestown, W. Va.
Warren Steam Pump Co., Warren, Mass.
Waterbury Farrel Foundry & Machine Co., Waterbury, Conn.
Watson-Stillman Co., 46 Dey St., New York.
Weiman Machine Works, Columbus, O.
Wells, F. C., Estate of, 116 S. Clinton St., Chicago, Ill.
Wetherill, Robt., & Co., Chester, Pa.
Whitehead, W. W., Co., Davenport, Ia.
Wilson-Snyder Mfg. Co., Ross & Water Sts., Pittsburg, Pa.
Winter, F. W., & Co., Faribault, Minn.
Wood, R. D., & Co., 400 Chestnut St., Philadelphia, Pa.
Worthington, Henry R., 114 Liberty St., New York.

300 Duplex.

American Well Works, Aurora, Ill.
Advance Pump & Compressor Co., Battle Creek, Mich.
Barr Pump Co., Germantown, Philadelphia, Pa.
Blake, Geo. F., Mfg. Co., 114 Liberty St., New York.
Buffalo Steam Pump Co., North Tonawanda, N. Y.
Cameron, A. S., Steam Pump Works, 433 E. 23d St., New York.
Cardwell Machine Co., Richmond, Va.
Davis, I. B., & Son, Hartford, Conn.
Dean Bros. Steam Pump Works, 10th St. & Senate Ave., Indianapolis, Ind.
Deane Steam Pump Co., Holyoke, Mass.
Douglas, W. & B., Middletown, Conn.
Dow, Geo. E., Pumping Engine Co., 179 First St., San Francisco, Cal.
Fairbanks Co., Broome & Elm Sts., New York.
Fairbanks, Morse & Co., 172 Franklin St., Chicago, Ill.
Foster Pump Works, 36 Bridge St., Brooklyn, N. Y.
Goulds Mfg. Co., Seneca Falls, N. Y. *See adv. page 13.*
Hall Steam Pump Co., Allegheny, Pa.
Hooker Steam Pump Co., St. Louis, Mo.
Kelley, Benjamin F., & Son, 91 Liberty St., New York. *See adv. page 14.*
Kensington Engine Works, Ltd., 245 N. Broad St., Philda.
Knowles Steam Pump Works, 114 Liberty St., New York.
Laidlaw-Dunn-Gordon Co., 114 Liberty St., New York.
Lucas, C. O., & Co., Greenville, O.
McGowan, John H., Co., Cincinnati, O.
Manistee Iron Works Co., Manistee, Mich.
New York Air Brake Co., 66 Broadway, New York.
Patterson, Frank L., & Co., 26 Cortlandt St., New York.
Pulling, James G., & Co., Columbus, O.
Snow Steam Pump Works, 114 Liberty St., New York.

POWER PUMPS, DUPLEX, continued

Stilwell-Bierce & Smith-Vaile Co., Dayton, O.
Union Iron Works, San Francisco, Cal.
Waterbury-Farrel Foundry & Machine Co., Waterbury, Conn.
Wilson-Snyder Mfg. Co., Ross & Water Sts., Pittsburg, Pa.
Worthington, Henry R., 114 Liberty St., New York.

301 . Triplex.

American Well Works, Aurora, Ill.
Blake, Geo. F., Mfg. Co., 114 Liberty St., New York.
Davidson, M. T., 43-53 Keap St., Brooklyn, N. Y.
Deane Steam Pump Co., Holyoke, Mass.
Deming Co., Salem, O.
Douglas, W. & B., Middletown, Conn.
Fairbanks Co., Broome & Elm Sts., New York.
Goulds Mfg. Co., Seneca Falls, N. Y.
Hendrick Mfg. Co., Ltd., Carbondale, Pa.
Knowles Steam Pump Works, 114 Liberty St., New York.
Patterson, Frank L., & Co., 26 Cortlandt St., New York.
Rumsey & Co., Ltd., Seneca Falls, N. Y.
Van Wie, Irvin, Syracuse, N. Y.
Waterbury Farrell Foundry & Machine Co., Waterbury, Conn.
Worthington, Henry R., 114 Liberty St., New York.

302 ROTARY. For fire purposes. See 257, Centrifugal Pumps.

American Fire Engine Co., Seneca Falls, N. Y.
American Well Works, Aurora, Ill.
Ashcroft Mfg. Co., 85 Liberty St., New York.
Barnes Mfg. Co., Mansfield, O.
Connersville Blower Co., Connersville, Ind.
Creamery Package Mfg. Co., 180 Kinzie St., Chicago, Ill.
Davis-Johnson Co., 47 S. Canal St., Chicago, Ill.
Deane Steam Pump Co., Holyoke, Mass.
Deming Co., Salem, O.
Detroit Pump Co., Detroit, Mich.
Douglas, W. & B., Middletown, Conn.
Fairbanks Co., Broome & Elm Sts., New York.
Fales & Jenks Machine Co., Pawtucket, R. I.
Flint & Walling Mfg. Co., Kendallville, Ind.
Foster Pump Works, 36 Bridge St., Brooklyn, N. Y.
Goulds Mfg. Co., Seneca Falls, N. Y.
Great Western Mfg. Co., Leavenworth, Kan.
Hersey Mfg. Co., South Boston, Mass.
Holyoke Machine Co., Holyoke, Mass.
Humphrey Machine Co., Keene, N. H.
Humphryes Mfg. Co., Mansfield, O.
Jones, E. D., & Son Co., Pittsfield, Mass.
Roots, P. H. & F. M., Co., Connersville, Ind.
Rumsey & Co., Ltd., Seneca Falls, N. Y.
Southwark Foundry & Machine Co., 430 Washington Ave., Philadelphia, Pa.
Taber Pump Co., Buffalo, N. Y.
Temple Pump Co., 16-28 W. 15th Pl., Chicago, Ill.
Trahern Pump Co., Rockford, Ill.
Turners Falls Machine Co., Turners Falls, Mass.
Union Mfg. Co., New Britain, Conn.

ROTARY PUMPS, continued.

Union Steam Pump Co., Battle Creek, Mich.
United States Pump & Supply Co., Toledo, O.
Wilbraham-Green Blower Co., 2518 Frankford Ave., Philda.

303 SOAP.

American Steam Pump Co., Battle Creek, Mich.
Cameron, A. S., Steam Pump Works, 433 E. 23d St., N. Y.
Dean Bros. Steam Pump Works, 10th St. & Senate Ave., Indianapolis, Ind.
Deane Steam Pump Co., Holyoke, Mass.
Dopp, H. Wm., & Co., Buffalo, N. Y.
Goulds Mfg. Co., Seneca Falls, N. Y.
Hersey Mfg. Co., South Boston, Mass.
Pulsometer Steam Pump Co., 135 Greenwich St., New York.

304 STEAM. For all pumping purposes.

Acton, John, 118 John St., Brooklyn, N. Y.
Advance Pump & Compressor Co., Battle Creek, Mich.
Albany Steam Trap Co., Albany, N. Y.
Alberger Condenser Co., 95 Liberty St., New York.
Allis-Chalmers Co., New York Life Bldg., Chicago, Ill.
American Steam Pump Co., Battle Creek, Mich.
American Well Works, Aurora, Ill.
Athol Pump Co., Athol, Mass.
Atwell Machinery Co., Pittsburg, Pa.
Austin Mfg. Co., Manhattan Bldg., Chicago, Ill.
Barnes Mfg. Co., Mansfield, O.
Barr Pump Co., Germantown, Philadelphia, Pa.
Black-Clawson Co., Hamilton, O.
Blake, Geo. F., Mfg. Co., 114 Liberty St., New York.
Blake, W. H., Steam Pump Co., Fitchburg, Mass.
Blakeslee Mfg. Co., Du Quoin, Ill.
Boyts, Porter & Co., Connellsville, Pa.
Bulkley, Henry W., 141 Broadway, New York.
Burdett-Rowntree Mfg. Co., 85-87 W. Jackson Blvd., Chicago.
Cameron, A. S., Steam Pump Works, 433 E. 23d St., New York.
Cameron-Tennant Machine Works, Richmond, Va.
Camp Engineering Co., 47 W. Lake St., Chicago, Ill.
Canton Pump Co., Canton, O.
Cardwell Machine Co., Richmond, Va.
Carlin's, Thos., Sons Co., Allegheny, Pa.
Carpenter, Thomas D., Machine Works, 93 Pearl St., Brooklyn, N. Y.
Challenge Windmill & Feed Mill Co., Batavia, Ill.
Clayton Air Compressor Works, 114 Liberty St., New York.
Columbiana Pump Co., Columbiana, O.
Conrad, Thomas P., 119 S. 4th St., Philadelphia, Pa.
Cook, A. D., Lawrenceburg, Ind.
Cook Well Co., 703 Market St., St. Louis, Mo.
Crawford & McCrimmon Co., Brazil, Ind.
Creamery Package Mfg. Co., 180 inzie St., Chicago, Ill.
Darling Pump & Mfg. Co., Williamsport, Pa.
D'Auria Pumping Engine Co., Philadelphia, Pa.
Davidson, M. T., 43-53 Keap St., Brooklyn, N. Y.
Davis, F. H., & Co., Boston, Mass.
Davis, I. B., & Son, Hartford, Conn.

STEAM PUMPS, continued

Davis-Johnson Co., 47 S. Canal St., Chicago, Ill.
Dean Bros. Steam Pump Works, 10th St. & Senate Ave., Indianapolis, Ind.
Deane Steam Pump Co., Holyoke, Mass.
Deming Co., Salem, O.
Diamond Drill & Machine Co., Birdsboro, Pa.
Douglas, W. & B., Middletown, Conn.
Dow, Geo. E., Pumping Engine Co., 179 First St., San Francisco, Cal.
Downie Pump Co., Downieville, Pa.
Edson Mfg. Co., 132 Commercial St., Boston, Mass.
Edwards, Joseph, & Co., 412 Water St., New York.
Elliott, George E., Calais, Me.
Emerson Steam Pump Co., Alexandria, Va.
Epping-Carpenter Co., 2410 Penn Ave., Pittsburg, Pa.
Erie Pump & Engine Co., Erie, Pa.
Erwin & Co., 35 N. Canal St., Chicago, Ill.
Fairbanks Co., Broome & Elm Sts., New York.
Fairbanks, Morse & Co., 172 Franklin St., Chicago, Ill.
Filer & Stowell Co., Ltd., Milwaukee, Wis.
Flint & Walling Mfg. Co., Kendallville, Ind.
Foster Pump Works, 36 Bridge St., Brooklyn, N. Y.
Franklin Iron Works, Port Carbon, Pa.
Fritz, Geo. J., Foundry & Machine Co., St. Louis, Mo.
Gardner Governor Co., Quincy, Ill.
Gilbert & Barker Mfg. Co., Springfield, Mass.
Goulds Mfg. Co., Seneca Falls, N. Y. *See adv. page 13.*
Grant Iron Works, Mahanoy City, Pa.
Great Western Mfg. Co., Leavenworth, Kan.
Guild & Garrison, 457 Kent Ave., Brooklyn, N. Y.
Hall Steam Pump Co., Allegheny, Pa.
Harris, William A., Steam Engine Co., Providence, R. I.
Hayes Pump & Planter Co., Galva, Ill.
Hill Machine Co., Anderson, Ind.
Hill, William E., & Co., Kalamazoo, Mich.
Holly Mfg. Co., Lockport, N. Y.
Hooker Steam Pump Works, St. Louis, Mo.
Household Pump Co., 1237 Arch St., Philadelphia, Pa.
Hubbard's, Norman, Sons, 265 Water St., Brooklyn, N. Y.
Humphryes Mfg. Co., Mansfield, O.
Hunt, Rodney, Machine Co., Orange, Mass.
I. X. L. & Goshen Pump Co., Goshen, Ind.
Ingersoll-Sergeant Drill Co., 26 Cortlandt St., New York.
Jackson, Byron, San Francisco, Cal.
Jeanesville Iron Works Co., Jeanesville, Pa.
Jones, E. D., & Sons Co., Pittsfield, Mass.
Kehoe, William, & Sons, Savannah, Ga.
Kelley, Benjamin F., & Son, 91 Liberty St., New York. *See adv. page 14.*
Kensington Engine Works, Ltd., 245 N. Broad St., Philda.
Keystone Engine & Machine Works, 5th & Buttonwood Sts., Philadelphia, Pa.
Kingsford Foundry & Machine Works, Oswego, N. Y.
Knowles Steam Pump Works, 114 Liberty St., New York.
Knowlson & Kelly, Troy, N. Y
La France Fire Engine Co., Elmira, N. Y.
Laidlaw-Dunn-Gordon Co., 114 Liberty St., New York.

STEAM PUMPS, continued

Lake City Engineering Co., Erie, Pa.
Lang & Goodhue Mfg. Co., Burlington, Vt.
Lindgren Mahan Fire Apparatus Works, 793 W. Lake St., Chicago, Ill.
Lovegrove & Co., 143 N. 3d St., Philadelphia, Pa.
McDonald, A. Y., & Morrison Mfg. Co., Dubuque, Ia.
McDowell & Co., Pittsburg, Pa.
McGowan, John H., Co., Cincinnati, O.
McLeod, Walter, & Co., Cincinnati, O.
McSwegan, F., & Sons, 120 Liberty St., New York.
Manistee Iron Works Co., Manistee, Mich.
Mansfield Engineering Co., Mansfield, O.
Maslin, J., & Sons, 163 First St., Jersey City, N. J.
Mason Regulator Co., 158 Summer St., Boston, Mass.
Mast, Foos & Co., Springfield, O.
May Bros., Galesburg, Ill.
Mecklenburg Iron Works, Charlotte, N. C.
Moline Pump Co., Moline, Ill.
Morris County Machine & Iron Co., Dover, N. J.
Morris Machine Works, Baldwinsville, N. Y.
Morse, Andrew J., & Son, 138 Congress St., Boston, Mass.
Motter, Geo. F., & Sons, York, Pa.
Murray Iron Works Co., Burlington, Ia.
Myers, F. E., & Bro., Ashland, O.
National Foundry & Machine Co., Louisville, Ky.
National Steam Pump Co., Upper Sandusky, O.
New York Air Brake Co., 66 Broadway, New York.
Norwood Engineering Co., Florence, Mass.
Noye Mfg. Co., Buffalo, N. Y.
Oakes, William L., Decatur, Ill.
Olney & Warrin, 36 Dey St., New York.
Oram, John S., 160-172 Coe St., Cleveland, O.
Perkins Wind Mill & Axe Co., Mishawaka, Ind.
Phelps & Bigelow Wind Mill Co., Kalamazoo, Mich.
Pierce Well, Engineering & Supply Co., 136 Liberty St., N. Y.
Pittsburg Valve, Foundry & Construction Co., Pittsburg, Pa.
Pneumatic Engineering Co., 128 Broadway, New York.
Porter, J. E., Co., Ottawa, Ill.
Presbrey, C. H., & Co., Sterling, Ill.
Prescott Steam Pump Co., Milwaukee, Wis.
Pulling, James G., & Co., Columbus, O.
Pulsometer Steam Pump Co., 135 Greenwich St., New York.
Queen City Engineering Co., Buffalo, N. Y.
Racine Engine & Iron Works, Racine, Wis.
Red Jacket Mfg. Co., Davenport, Ia.
Rees, Jas., & Sons Co., Pittsburg, Pa.
Reliance Machine & Tool Works, 3323 Franklin Ave., St. Louis, Mo.
Rider-Ericsson Engine Co., 35 Warren St., New York.
Roberts, Geo. J., & Co., Dayton, O.
Roots, P. H. & F. M., Co., Connersville, Ind.
Rumsey & Co., Ltd., Seneca Falls, N. Y.
St. Joseph Pump & Mfg. Co., St. Joseph, Mo.
Schofield, J. S., Sons Co., Macon, Ga.
Scranton Steam Pump Co., Scranton, Pa.
Smedley Steam Pump Co., Dubuque, Ia.
Smith, S. Morgan Co., York, Pa.

STEAM PUMPS, continued

Smith, Myers & Schnier Co., Cincinnati, O.
Snider-Hughes Co., Cleveland, O.
Snow Steam Pump Works, 114 Liberty St., New York.
Southwark Foundry & Machine Co., 430 Washington Ave., Philadelphia, Pa.
Springfield Elevator & Machine Co., Springfield, Mass.
Squier, Geo. L., Mfg. Co., Buffalo, N. Y.
Stewart Heater Co., Buffalo, N. Y. *See adv. page 9.*
Stilwell-Bierce & Smith-Vaile Co., Dayton, O.
Taber Pump Co., Buffalo, N. Y.
Trahern Pump Co., Rockford, Ill.
Union Iron Works, San Francisco, Cal.
Union Mfg. Co., New Britain, Conn.
Union Steam Pump Co., Battle Creek, Mich.
U. S. Wind Engine & Pump Co., Batavia, Ill.
Van Duzen, E. W., Co., Cincinnati, O.
Ward, Charles, Charlestown, W. Va.
Warren Steam Pump Co., Warren, Mass.
Watson-Stillman Co., 46 Dey St., New York.
Weiman Machine Works, Columbus, O.
Wells, F. C., Estate of, 116 S. Clinton St., Chicago, Ill.
Wetherill, Robert, & Co., Chester, Pa.
Williams Mfg. Co., Kalamazoo, Mich.
Wilson-Snyder Mfg. Co., Rose & Water Sts., Pittsburg, Pa.
Wood, R. D., & Co., 400 Chestnut St., Philadelphia, Pa.
Woodmanse & Hewitt Mfg. Co., Freeport, Ill.
Worthington, Henry R., 114 Liberty St., New York.
Young, E. R., & Sons, Titusville, Pa.

305 **Duplex.**

American Well Works, Aurora, Ill.
Barr Pump Co., Germantown, Philadelphia, Pa.
Blake, Geo. F., Mfg. Co., 114 Liberty St., New York.
Blakeslee Mfg. Co., Du Quoin, Ill.
Buffalo Steam Pump Co., North Tonawanda, N. Y.
Canton Pump Co., Canton, O.
Cardwell Machine Co., Richmond, Va.
Carlin's, Thomas, Sons Co., Allegheny, Pa.
Challenge Windmill and Feed Mill Co., Batavia, Ill.
Deane Steam Pump Co., Holyoke, Mass.
Epping-Carpenter Co., 2410 Penn Ave., Pittsburg, Pa.
Fairbanks Co., Broome & Elm Sts., New York.
Filer & Stowell Co., Ltd., Milwaukee, Wis.
Foster Pump Works, 36 Bridge St., Brooklyn, N. Y.
Gardner Governor Co., Quincy, Ill.
Guild & Garrison, 457 Kent Ave., Brooklyn, N. Y.
Hall Steam Pump Co., Allegheny, Pa.
Hooker Steam Pump Co., St. Louis, Mo.
Jackson, Byron, San Francisco, Cal.
Jeanesville Iron Works, Jeanesville, Pa.
Knowles Steam Pump Works, 114 Liberty St., New York.
Laidlaw-Dunn-Gordon Co., 114 Liberty St., New York.
McGowan, John H., Co., Cincinnati, O.
Manistee Iron Works Co., Manistee, Mich.
Nevin & Wetmore Iron Works, Lowville, N. Y.
Pulling, James G., & Co., Columbus, O.
Queen City Engineering Co., Buffalo, N. Y.

STEAM PUMPS, DUPLEX, continued

Roberts, Geo. J., & Co., Dayton, O.
Smedley Steam Pump Co., Dubuque, Ia.
Snider-Hughes Co., Cleveland, O.
Snow Steam Pump Works, 114 Liberty St., New York.
Springfield Elevator & Pump Co., Springfield, Mass.
Stilwell-Bierce & Smith-Vaile Co., Dayton, O.
Vulcan Iron Works, Wilkesbarre, Pa.
Watson-Stillman Co., 46 Dey St., New York.
Wood, R. D., & Co., 400 Chestnut St., Philadelphia, Pa.
Worthington, Henry R., 114 Liberty St., New York.

306 **Jet.**

American Steam Pump Co., Battle Creek, Mich.
Barr Pump Co., Germantown, Philadelphia, Pa.
Blakeslee Mfg. Co., Du Quoin, Ill.
Epping-Carpenter Co., 2410 Penn Ave., Pittsburg, Pa.
Hayden & Derby Mfg. Co., 89 Liberty St., New York.
McGowan, John H., Co., Cincinnati, O.
Penberthy Injector Co., Detroit, Mich.
Schaeffer & Budenberg Mfg. Co., St. Edwards & Bedford Sts., Brooklyn, N. Y.
Tranter-Davison Mfg. Co., Pittsburg, Pa.
Van Duzen, E. W., Co., Cincinnati, O.

307 **Vertical.**

American Steam Pump Co., Battle Creek, Mich.
American Well Works, Aurora, Ill.
Blake, Geo. F., Pump Co., 114 Liberty St., New York.
Cameron, A. S., Steam Pump Works, 433 E. 23d St., N. Y.
Davidson, M. T., 43-53 Keap St., Brooklyn, N. Y.
Dean Bros. Steam Pump Works, 10th St. & Senate Ave., Indianapolis, Ind.
Deane Steam Pump Co., Holyoke, Mass.
Fairbanks Co., Broome & Elm Sts., New York.
Foster Pump Works, 36 Bridge St., Brooklyn, N. Y.
Hall Steam Pump Co., Allegheny, Pa.
Hooker Steam Pump Co., St. Louis, Mo.
Knowles Steam Pump Works, 114 Liberty St., New York.
Laidlaw-Dunn-Gordon Co., 114 Liberty St., New York.
McGowan, John H., Co., Cincinnati, O.
Manistee Iron Works, Manistee, Mich.
Pulling, James G., & Co., Columbus, O.
Snow Steam Pump Works, 114 Liberty St., New York.
Stilwell-Bierce & Smith-Vaile Co., Dayton, O.
Warren Steam Pump Co., Warren, Mass.
Wood, R. D., & Co., 400 Chestnut St., Philadelphia, Pa.
Worthington, Henry R., 114 Liberty St., New York.

308 **TEST.** For testing gages, tanks, cylinders, etc.

American Steam Gauge & Valve Mfg. Co., 220 Camden St., Boston, Mass.
Ashcroft Mfg. Co., 85 Liberty St., New York.
Ashton Valve Co., 271 Franklin St., Boston, Mass.
Belfield, H., & Co., 435 N. Broad St., Philadelphia, Pa.
Cameron, A. S., Steam Pump Works, 433 E. 23d St., N. Y.
Crosby Steam Gage & Valve Co., 97 Oliver St., Boston, Mass.

TEST PUMPS, continued

Fairbanks Co., Broome & Elm Sts., New York.
Goulds Mfg. Co., Seneca Falls, N. Y.
Haydenville Co., Haydenville, Mass.
Henderer's, A. L., Sons, Wilmington, Del.
Humphryes Mfg. Co., Mansfield, O.
Knapp Mfg. Co., 24 Frankfort St., New York.
Lonergan, J. E., & Co., 211 Race St., Philadelphia, Pa.
Olsen, Tinius, & Co., 500 N. 12th St., Philadelphia, Pa.
Quimby, William E., Inc., 86 Liberty St., New York.
Schaeffer & Budenberg, Mfg. Co., St. Edwards & Bedford Sts., Brooklyn, N. Y.
Star Brass Mfg. Co., 114 E. Dedham St., Boston, Mass.
Watson-Stillman Co., 46 Dey St., New York.

309 Boiler.

Ashcroft Mfg. Co., 85 Liberty St., New York.
Ashton Valve Co., 271 Franklin St., Boston, Mass.
Barnes Mfg. Co., Mansfield, O.
Belfield, H., & Co., 435 N. Broad St., Philadelphia, Pa.
Cameron, A. S., Steam Pump Works, 433 E. 23d St., N. Y.
Crosby Steam Gage & Valve Co., 97 Oliver St., Boston, Mass.
Darling Pump & Mfg. Co., Williamsport, Pa.
Deane Steam Pump Co., Holycke, Mass.
Deming Co., Salem, O.
Douglas, W. & B., Middletown, Conn.
Fairbanks Co., Broome & Elm Sts., New York.
Goulds Mfg. Co., Seneca Falls, N. Y. *See adv. page 13.*
Henderer's, A. L., Sons. Wilmington, Del.
Humphryes Mfg. Co., Mansfield, O.
Robertson, Jas. L., & Sons, 204 Fulton St., New York.
Rumsey & Co., Ltd., Seneca Falls, N. Y.
Schaeffer & Budenberg Mfg. Co., St. Edwards & Bedford Sts., Brooklyn, N. Y.
Scovill Mfg. Co., Waterbury, Conn.

310 Hydraulic.

American Steam Pump Co., Battle Creek, Mich.
Ashcroft Mfg. Co., 85 Liberty St., New York.
Ashton Valve Co., 271 Franklin St., Boston, Mass.
Belfield, H., & Co., 435 N. Broad St., Philadelphia, Pa.
Blake, Geo. F., Mfg. Co., 114 Liberty St., New York.
Cameron, A. S., Steam Pump Works, 433 E. 23d St., New York.
Crosby Steam Gage & Valve Co., 97 Oliver St., Boston, Mass.
Fairbanks Co., Broome & Elm Sts., New York.
Goulds Mfg. Co., Seneca Falls, N. Y. *See adv. page 13.*
Haydenville Co., Haydenville, Mass.
Howell, R. R., & Co., Minneapolis, Minn.
Knowles Steam Pump Works, 114 Liberty St., New York.
Norwich Belt Mfg. Co., Norwich, Conn.
Riehle Bros., Testing Machine Co., 1424 N. 9th St., Philda.
Rumsey & Co., Ltd., Seneca Falls, N. Y.
Olsen, Tinius, & Co., 500 N. 12th St., Philadelphia, Pa.
Schaeffer & Budenberg Mfg. Co., St. Edwards & Bedford Sts., Brooklyn, N. Y.
Star Brass Mfg. Co., 114 E. Dedham St., Boston, Mass.
Stilwell-Bierce & Smith-Vaile Co., Dayton, O.

TEST PUMPS, HYDRAULIC, continued.

Union Steam Pump Co., Battle Creek, Mich.
Watson-Stillman Co., 46 Dey St., New York.
Worthington, Henry R., 114 Liberty St., New York.

311 **Inspectors'.**

American Steam Gauge & Valve Mfg. Co., 220 Camden St., Boston, Mass.
Ashcroft Mfg. Co., 85 Liberty St., New York.
Ashton Valve Co., 271 Franklin St., Boston, Mass.
Belfield, H., & Co., 435 N. Broad St., Philadelphia, Pa.
Crosby Steam Gage & Valve Co., 97 Oliver St., Boston, Mass.
Fairbanks Co., Broome & Elm Sts., New York.
Goulds Mfg. Co., Seneca Falls, N. Y.
Schaeffer & Budenberg Mfg. Co., St. Edwards & Bedford Sts., Brooklyn, N. Y.
Star Brass Mfg. Co., 114 E. Dedham St., Boston, Mass.

312 **VACUUM.** Used in connection with vacuum pans and condensing engines; also in all drying and evaporating systems.

Allis-Chalmers Co., New York Life Bldg., Chicago, Ill.
American Air Compressor Works, 26 Cortlandt St., New York.
American Steam Pump Co., Battle Creek, Mich.
Barnes Mfg. Co., Mansfield, O.
Barr Pump Co., Germantown, Philadelphia, Pa.
Blake, Geo. F., Mfg. Co., 114 Liberty St., New York.
Bliss, E. W., Co., 17 Adams St., Brooklyn, N. Y.
Buescher Mfg. Co., Elkhart, Ind.
Cameron, A. S., Steam Pump Works, 433 E. 23d St., N. Y.
Canton Pump Co., Canton, O.
Carpenter, Thomas D., Machine Works, 93 Pearl St., Brooklyn, N. Y.
Clark Novelty Co., Rochester, N. Y.
Clayton Air Compressor Works, 114 Liberty St., New York.
Crosby Steam Gage & Valve Co., 97 Oliver St., Boston, Mass.
Dean Bros. Steam Pump Works, 10th St. & Senate Ave., Indianapolis, Ind.
Deane Steam Pump Co., Holyoke, Mass.
Deming Co., Salem, O.
Epping-Carpenter Co., 2410 Penn Ave., Pittsburg, Pa.
Fairbanks Co., Broome & Elm Sts., New York.
Goulds Mfg. Co., Seneca Falls, N. Y.
Guild & Garrison, 457 Kent Ave., Brooklyn, N. Y.
Hall Steam Pump Co., Allegheny, Pa.
Hooker Steam Pump Co., St. Louis, Mo.
Hubbard's, Norman, Sons, 265 Water St., Brooklyn, N. Y.
Humphryes Mfg. Co., Mansfield, O.
Kingsford Foundry & Machine Works, Oswego, N. Y.
Knowles Steam Pump Works, 114 Liberty St., New York.
Laidlaw-Dunn-Gordon Co., 114 Liberty St., New York.
McGowan, John H., Co., Cincinnati, O.
Manistee Iron Works, Manistee, Mich.
Portland Co., Inc., Portland, Me.
Pulling, James G., & Co., Columbus, O.
Pulsometer Steam Pump Co., 135 Greenwich St., New York.
Rumsey & Co., Ltd., Seneca Falls, N. Y.
Sargent & Greenleaf Co., Rochester, N. Y.

VACUUM PUMPS, continued

Schaeffer & Budenberg Mfg. Co., St. Edwards & Bedford Sts., Brooklyn, N. Y.
Snider-Hughes Co., Cleveland, O.
Snow Steam Pump Works, 114 Liberty St., New York.
Stilwell-Bierce & Smith-Vaile Co., Dayton, O.
Union Steam Pump Co., Battle Creek, Mich.
Warren Steam Pump Co., Warren, Mass.
Wilson-Snyder Mfg. Co., Ross & Water Sts., Pittsburg, Pa.
Worthington, Henry R., 114 Liberty St., New York.

313 **Automatic Steam.**

Maslin, John, & Son, 163 First St., Jersey City, N. J.

314 **Crank and Fly Wheel.**

Allis-Chalmers Co., New York Life Bldg., Chicago, Ill.
American Steam Pump Co., Battle Creek, Mich.
Barr Pump Co., Germantown, Philadelphia, Pa.
Blake, Geo. F., Mfg. Co., 114 Liberty St., New York.
Bushnell, G. H., Mfg. Co., Thompsonville, Conn.
Cameron, A. S., Steam Pump Works, 433 E. 23d St., N. Y.
Cardwell Machine Co., Richmond, Va.
Clayton Air Compressor Works, 114 Liberty St., New York.
Dean Bros. Steam Pump Works, 10th St. & Senate Ave., Indianapolis, Ind.
Deane Steam Pump Co., Holyoke, Mass.
Erwin & Co., 35 N. Canal St., Chicago, Ill.
Fairbanks Co., Broome & Elm Sts., New York.
Goulds Mfg. Co., Seneca Falls, N. Y.
Guild & Garrison, 457 Kent Ave., Brooklyn, N. Y.
Hall Steam Pump Co., Allegheny, Pa.
Hydraulic Press Mfg. Co., Mt. Gilead, O.
Knowles Steam Pump Works, 114 Liberty St., New York.
McGowan, John H., Co., Cincinnati, O.
Manistee Iron Works Co., Manistee, Mich.
Stilwell-Bierce & Smith-Vaile Co., Dayton, O.
Warren Steam Pump Co., Warren, Mass.
Worthington, Henry R., 114 Liberty St., New York.

315 **Duplex.**

Blake, Geo. F., Mfg. Co., 114 Liberty St., New York.
Canton Pump Co., Canton, O.
Clayton Air Compressor Works, 114 Liberty St., New York.
Deane Steam Pump Co., Holyoke, Mass.
Epping-Carpenter Co., 2410 Penn Ave., Pittsburg, Pa.
Goulds Mfg. Co., Seneca Falls, N. Y.
Guild & Garrison, 457 Kent Ave., Brooklyn, N. Y.
Hall Steam Pump Co., Allegheny, Pa.
Knowles Steam Pump Works, 114 Liberty St., New York.
Laidlaw-Dunn-Gordon Co., 114 Liberty St., New York.
McGowan, John H., Co., Cincinnati, O.
Manistee Iron Works, Manisctee, Mich.
Pulling, James G., & Co., Columbus, O.
Stilwell-Bierce & Smith-Vaile Co., Dayton, O.
Warren Steam Pump Co., Warren, Mass.
Worthington, Henry R., 114 Liberty St., New York.

VACUUM PUMPS, continued.

316 **Duplex Fly Wheel.**

Barr Pump Co., Germantown, Philadelphia, Pa.
Blake, Geo. F., Mfg. Co., 114 Liberty St., New York.
Clayton Air Compressor Works, 114 Liberty St., New York.
Deane Steam Pump Co., Holyoke, Mass.
Goulds Mfg. Co., Seneca Falls, N. Y.
Guild & Garrison, 457 Kent Ave., Brooklyn, N. Y.
Fairbanks Co., Broome & Elm Sts., Brooklyn, N. Y.
Hall Steam Pump Co., Allegheny, Pa.
Knowles Steam Pump Works, 114 Liberty St., New York.
Laidlaw-Dunn-Gordon Co., 114 Liberty St., New York.
McGowan, John H., Co., Cincinnati, O.
Stilwell-Bierce & Smith-Vaile Co., Dayton, O.
Warren Steam Pump Co., Warren, Mass.
Worthington, Henry R., 114 Liberty St., New York.

317 **Duplex and Single Actuated.**

Canton Pump Co., Canton, O.
Goulds Mfg. Co., Seneca Falls, N. Y.
Hall Steam Pump Co., Allegheny, Pa.

318 **Power.**

American Steam Pump Co., Battle Creek, Mich.
Blake, Geo. F., Mfg. Co., 114 Liberty St., New York.
Cameron, A. S., Steam Pump Works, 433 E. 23d St., New York.
Canton Pump Co., Canton. O.
Clayton Air Compressor Works, 114 Liberty St., New York.
Conover Mfg. Co., Jersey City, N. J.
Dean Bros. Steam Pump Works, 10th St. & Senate Ave., Indianapolis, Ind.
Deane Steam Pump Co., Holyoke, Mass.
Fairbanks Co., Broome & Elm Sts., New York.
Goulds Mfg. Co., Seneca Falls, N. Y.
Knowles Steam Pump Works, 114 Liberty St., New York.
Laidlaw-Dunn-Gordon Co., 114 Liberty St., New York.
Pulling, James G., & Co., Columbus, O.
Rumsey & Co., Ltd., Seneca Falls, N. Y.
Warren Steam Pump Co., Warren, Mass.
Worthington Henry R.. 114 Liberty St., New York.

319 VERTICAL DUPLEX.

Blake, Geo. F., Mfg. Co., 114 Liberty St., New York.
Clayton Air Compressor Works, 114 Liberty St., New York.
Fairbanks Co., Broome & Elm Sts., New York.
Goulds Mfg. Co., Seneca Falls, N. Y.
Knowles Steam Pump Works, 114 Liberty St., New York.

320 VERTICAL SINGLE.

Blake, Geo. F., Mfg. Co., 114 Liberty St., New York.
Clayton Air Compressor Works, 114 Liberty St., New York.
Dean Bros. Steam Pump Works, 10th St. & Senate Ave., Indianapolis, Ind.
Goulds Mfg. Co., Seneca Falls, N. Y.
Knowles Steam Pump Works, 114 Liberty St., New York.

VACUUM PUMPS, continued.

321 VERTICAL TRIPLEX.

Blake, Geo. F., Mfg. Co., 114 Liberty St., New York.
Cameron, A. S., Steam Pump Works, 433 E. 23d St., N. Y.
Dean Bros. Steam Pump Works, 10th St. & Senate Ave., Indianapolis, Ind.
Deane Steam Pump Co., Holyoke, Mass.
Goulds Mfg. Co., Seneca Falls, N. Y.
Knowles Steam Pump Works, 114 Liberty St., New York.
Rumsey & Co., Ltd., Seneca Falls, N. Y.
Stilwell-Bierce & Smith-Vaile Co., Dayton, O.

322 **Single.**

American Steam Pump Co., Battle Creek, Mich.
Blake, Geo. F., Mfg. Co., 114 Liberty St., New York.
Buffalo Steam Pump Co., North Tonawanda, N. Y.
Cameron, A. S., Steam Pump Works, 433 E. 23d St., N. Y.
Canton Pump Co., Canton, O.
Clayton Air Compressor Works, 114 Liberty St., New York.
Davidson, M. T., 43-53 Keap St., Brooklyn, N. Y.
Dean Bros. Steam Pump Works, 10th St. & Senate Ave., Indianapolis, Ind.
Deane Steam Pump Co., Holyoke, Mass.
Epping-Carpenter Co., 2410 Penn Ave., Pittsburg, Pa.
Fairbanks Co., Broome & Elm Sts., New York.
Goulds Mfg. Co., Seneca Falls, N. Y.
Guild & Garrison, 457 Kent Ave., Brooklyn, N. Y.
Hall Steam Pump Co., Allegheny, Pa.
Hooker Steam Pump Co., St. Louis, Mo.
Knowles Steam Pump Works, 114 Liberty St., New York.
McGowan, John H., Co., Cincinnati, O.
Manistee Iron Works Co., Manistee, Mich.
Pulling, James G., & Co., Columbus, O.
Snider-Hughes Co., Cleveland, O.
Snow Steam Pump Works, 114 Liberty St., New York.
Stilwell-Bierce & Smith-Vaile Co., Dayton, O.
Temple Pump Co., 16-28 W. 15th St., Chicago, Ill.
Union Steam Pump Co., Battle Creek, Mich.
Warren Steam Pump Co., Warren, Mass.
Worthington, Henry R., 114 Liberty St., New York.

323 **Single Fly Wheel.**

American Steam Pump Co., Battle Creek, Mich.
Blake, Geo. F., Mfg. Co., 114 Liberty St., New York.
Cameron, A. S., Steam Pump Works, 433 E. 23d St., N. Y.
Clayton Air Compressor Works, 114 Liberty St., New York.
Davidson, M. T., 43-53 Keap St., Brooklyn, N. Y.
Deane Steam Pump Co., Holyoke, Mass.
Goulds Mfg. Co., Seneca Falls, N. Y.
Guild & Garrison, 457 Kent Ave., Brooklyn, N. Y.
Hall Steam Pump Co., Allegheny, Pa.
Knowles Steam Pump Works, 114 Liberty St., New York.
McGowan, John H., Co., Cincinnati, O.
Stilwell-Bierce & Smith-Vaile Co., Dayton, O.
Worthington, Henry R., 114 Liberty St., New York.

324 **WINDMILL.**

Barnes Mfg. Co., Mansfield, O.
Carroll Iron Works, 719 Carroll Ave., Chicago, Ill.
Cedar Rapids Pump Co., Cedar Rapids, Ia.
Challenge Windmill & Feed Mill Co., Batavia, Ill.
Cook, A. D., Lawrenceburg, Ind.
Corcoran, Andrew J., 11 John St., New York.
Deming Co., Salem, O.
Dempster Mill Mfg. Co., Beatrice, Neb.
Fairbanks Co., Broome & Elm Sts., New York.
Flint & Walling Mfg. Co., Kendallville, Ind.
Goulds Mfg. Co., Seneca Falls, N. Y.
Hayes Pump & Planter Co., Galva, Ill.
Heller, Aller & Co., Napoleon, O.
Humphryes Mfg. Co., Mansfield, O.
Lansing Motor & Pump Co., Lansing, Mich.
Maud S. Windmill & Pump Co., Lansing, Mich.
Myers, F. E., & Bro., Ashland, O.
Porter, J. E., Co., Ottawa, Ill.
Red Cross Mfg. Co., Bluffton, Ind.
Stover Mfg. Co., Freeport, Ill.
Union Mfg. Co., New Britain, Conn.
United States Wind Engine & Pump Co., Batavia, Ill.
Trahern Pump Co., Rockford, Ill.
Ward Pump Co., Rockford, Ill.

HOISTING AND CONVEYING AND MINING MACHINERY.

INDEX TO DEPARTMENTS.

	Page
Hoisting and Conveying Machinery - - - -	231
Industrial Railways - - - - - - - -	254
Mining Machinery - - - - - - - -	258

MANUFACTURERS OF

HOISTING AND CONVEYING MACHINERY.

Alphabetical Index.

Acme Road Machinery Co., Frankfort, N. Y.—Winches, Windlasses, etc.
Adams Bros. & Co., 355 31st St., Chicago, Ill.—Hod Elevators.
Adrian Brick & Tile Machine Co., Adrian, Mich.—Hod Elevators, etc.
Aetna Foundry & Machine Co., Springfield, Ill.—Mine Cars.
Albro-Clem Elevator Co., 7th St. & Glenwood Ave., Philadelphia, Pa.—Freight and Passenger Elevators.
Alliance Machine Co., Alliance, O.—Cranes.
Allis-Chalmers Co., New York Life Bldg., Chicago, Ill.—Mining Machinery.
Alsing, J. R., Co., 75 Guernsey St., Brooklyn, N. Y.—Quartz Mills.
American Air Compressor Works, 26 Cortlandt St., New York.—Pneumatic Elevators.
American Car & Foundry Co., 706 Chestnut St., St. Louis, Mo.—Brick, Clay and Mine Cars, etc.
American Clay Working Mchy. Co., Bucyrus, O.—Brick Trucks, Cars.
American Concentrator Co., Joplin, Mo.—Concentrators, Separators, etc.
American Diamond Rock Drill Co., 95 Liberty St., New York.—Core Drills.
American Engineering Specialty Co., 204 Dearborn St., Chicago, Ill.—Mine Cars.
American Hoist & Derrick Co., St. Paul, Minn.—Cranes, Derricks, Elevators, etc.
American Safety Lamp & Mine Supply Co., Scranton, Pa.—Miners' Lamps, Signaling Apparatus, etc.
American Ship Windlass Co., Providence, R. I.—Winches and Windlasses.
American Steel & Wire Co., The Rookery, Chicago, Ill.—Wire Rope.
American Tool & Machine Co., 109 Beach St., Boston, Mass.—Spiral or Screw Conveyors.
American Tube & Stamping Co., Bridgeport, Conn.—Miners' Lamps.
Ames Plow Co., Quincy Hall, Boston, Mass.—Baggage Trucks.
Anderson, Charles, 18 Lexington Ave., Brooklyn, N. Y.—Hod Elevators.
Anderson, W. H., & Sons, Inc., 44 Macomb St., Detroit, Mich.—Hydraulic and Lifting Jacks.
Anton, George, Monongahela, Pa.—Miners' Lamps.
Archer Iron Works, 34th Place & S. Western Ave. Blvd., Chicago, Ill.—Mine Cars.
Arizona & Sonora Mfg. Co., Nogales, Arizona.—Stamp Mills.
Armstrong Mfg. Co., Bridgeport, Conn.—Miners' Tools.
Armstrong, Geo. F., 411 Cherry St., Philadelphia, Pa.—Warehouse, etc., Trucks.
Arthur Co., 188 Front St., New York.—Grip Hoists.

Atlas Bolt & Screw Co., Cleveland, O.—Trolleys, Tramways, Trucks, etc.
Atlas Pipe Wrench Co., 123 Liberty St., New York.—Miners' Tools.
Austin Mfg. Co., Manhattan Bldg., Chicago, Ill.—Mine Cars.
Avery Stamping Co., Cleveland, O.—Elevator Buckets.
Bacon, Earle C., 26 Cortlandt St., New York.—Trolleys, Tramways, Mine Cars, etc.
Bain Wagon Co., Kenosha, Wis.—Logging and Lumber Trucks.
Baird Machinery Co., Pittsburg, Pa.—Pneumatic Elevators.
Baker Mfg. Co., Evansville, Wis.—Screw Jacks.
Barber Mfg. Co., Ashtabula, O.—Screw and Wagon Jacks.
Barth Mfg. Co., Milwaukee, Wis.—Jacks.
Bartlett, A. F., & Co., Inc., Saginaw, Mich.—Mine Cars and Cages.
Bartlett, C. O., & Snow Co., French & Winter Sts., Cleveland, O.—Buckets, Conveyors, Elevators, etc.
Bates, James, Sons, Pratt & President Sts., Baltimore, Md.—Freight and Passenger Elevators.
Bates Machine Co., Joliet, Ill.—Wire Mill Trucks.
Bayley, Wm., & Sons Co., 732 Greenbush St., Milwaukee, Wis.—Brick, Logging, Lumber Trucks.
Beall Bros., Alton, Ill.—Miners' Tools.
Belcher & Taylor, Agl. Tool Co., Chicopee Falls, Mass.—Warehouse, etc., Trucks.
Belleville Pump & Skein Works, Belleville, Ill.—Jacks, Mine Cars, etc.
Bethlehem Foundry & Machine Co., So. Bethlehem, Pa.—Trolleys, Tramways, Cranes, etc.
Bignall & Keeler Mfg. Co., Edwardsville, Ill.—Miners' Tools.
Billmeyer & Small Co., York, Pa.—Mine Cars.
Bloomsburg Car Mfg. Co., Bloomsburg, Pa.—Mine Cars.
Bogert & Carlough Co., Paterson, N. J.—Warehouse, etc., Trucks.
Bonnot Co., Canton, O.—Brick, Clay, and Drier Cars.
Borden & Selleck Co., 48 Lake St., Chicago, Ill.—Elevator Boots.
Boston Bridge Works, 47 Winter St., Boston, Mass.—Traveling Cranes.
Boston Gear Works, 152 Purchase St., Boston, Mass.—Sprocket Wheel Chains.
Boston & Lockport Block Co., 160 Commercial St., Boston, Mass.—Blocks, Trucks, etc.
Box, Alfred, Co., Front & Poplar Sts., Philadelphia, Pa.—Cranes, Hoists, etc.
Boyer & Radford, Dayton, O.—Jacks.
Bradlee & Co., 1621 Beach Ave., Philadelphia, Pa.—Chains.
Bray Mfg. Co., Newark, N. J.—Lifting Jacks.
Bridgeport Chain Co., Bridgeport, Conn.—Coil Chains.
Broderick & Bascom Rope Co., 809 N. Main St., St. Louis, Mo.—Derricks, Wire Rope, etc.
Broedesser Elevator Mfg. Co., 512 Commerce St., Milwaukee, Wis.—Freight and Passenger Elevators.
Bronder, G. A., 229 Broadway, New York.—Coal Handling Machinery.
Brown Bros. Mfg. Co., W. Jackson Boulevard & Clinton St., Chicago, Ill. Screw Jacks.
Brown Hoisting Machinery Co., 1345 St. Clair St., Cleveland, O.—Cable Railways, Cranes, etc.
Browning Engineering Co., Collinwood, O.—Cranes, Elevators, etc.
Brunner & Lay, 133 W. Polk St., Chicago, Ill.—Derricks.
Bryant, W. G., Carterville, Mo.—Ore Concentrators.
Buckeye Mfg. Co., Anderson, Ind.—Wagon Jacks.
Bucyrus Co., So. Milwaukee, Wis.—Wrecking Cranes.
Buda Foundry & Mfg. Co., Monadnock Blk., Chicago, Ill.—Mine Cars.
Buffalo Scale Co., Buffalo, N. Y.—Trucks.

Buhl Malleable Co., Wight & Adair Sts., Detroit, Mich.—Conveyors, Elevators, etc.
Builders' Elevator Co., 22 Clinton St., Chicago, Ill.—Hod Elevators.
Bullock Electric Mfg. Co., Cincinnati, O.—Cranes.
Burroughs, Chas. Co., 141 Commerce St., Newark, N. J.—Hydraulic Jacks.
Butterworth & Lowe, Grand Rapids, Mich.—Logging and Lumber Trucks.
Byers, John F., Machine Co., Ravenna, O.—Derricks, Elevators, etc.
Byram & Co., Inc., 435 Guoin St., Detroit, Mich.—Cranes, Cars, etc.
Cahill & Hall Elevator Co., San Francisco, Cal.—Freight and Passenger Elevators.
Caird & Hawkesworth, Helena, Mont.—Stamp Mills.
Caldwell Car & Mfg. Co., Caldwell, O.—Mine Cars.
Caldwell, H. W., & Son, Co., Western Ave., & 17th St., Chicago, Ill.—Boots, Buckets, Conveyors, etc.
Carlin, W. J., Co., 25th St. & A. V. Ry., Pittsburg, Pa.—Cars.
Carlins', Thos., Sons, Co., Allegheny, Pa.—Derricks, Trolleys Tramways, etc.
Carr, Joseph B., Co., Troy, N. Y.—Chains.
Case Mfg. Co. Columbus, O.—Cranes, Hand Elevators, etc.
Catawissa Car & Foundry Co., Catawissa, Pa.—Mine Cars.
Chain Belt Co., 766 Park St., Milwaukee, Wis.—Link Belt Conveyors, etc.
Chambersburg Engineering Co., Chambersburg, Pa.—Cranes.
Chapman Jack Co., Cleveland, O.—Screw Jacks.
Chase Machine Co., 111 Elm St., Cleveland, O.—Winches and Windlasses.
Chattanooga Car & Foundry Co., Chattanooga, Tenn.—Mine Cars.
Chicago Pneumatic Tool Co., Fisher Bldg., Chicago, Ill.—Cranes, Elevators, etc.
Chickasaw Iron Works, 98 2d St., Memphis, Tenn.—Elevators, Trucks.
Chillcott-Evans Chain Co., 652 Preble Ave., Allegheny, Pa.—Chains.
Chisholm & Moore Mfg. Co., Lake, near Kirtland Sts., Cleveland, O.—Hoists, Trolleys, etc. *See adv. page 18.*
City Machine Co., Cleveland, O.—Hydraulic Jacks.
Clark, Alexander & Co., Quincy, Mass.—Derricks.
Clark, George P., Co., Windsor Locks, Conn.—Trucks.
Clark, W. J., Co., Salem, O.—Buckets.
Cleveland Block Co., 163 River St., Cleveland, O.—Tackle Blocks.
Cleveland Crane & Car Co., Wickliffe, O.—Cranes, Cars, etc.
Cleveland Elevator Bucket Co., 225 St. Clair St., Cleveland, O.—Elevator Buckets.
Coburn Trolley Track Mfg. Co., Holyoke, Mass.—Trolleys and Tramways.
Cohoes Iron Foundry & Machine Co., Cohoes, N. Y.—Trolleys and Tramways.
Colorado Iron Works Co., Denver, Colo.—Mine Cars, Cages, etc.
Columbus Chain Co., Columbus, O.—Chains.
Comstock, George S., Mechanicsburg, Pa.—Trucks.
Connellsville Machine & Car Co., Connellsville, Pa.—Mine Cars, Cages.
Contractors Plant Mfg. Co., 127 Erie St., Buffalo, N. Y.—Cranes, Derricks, etc.
Covert Mfg. Co., Watervliet, N. Y.—Wagon Jacks.
Cram, D. H., Powers St., Boston, Mass.—Derricks.
Crane, A. M., & Co., The Rookery, Chicago, Ill.—Track Jacks.
Crawford & McCrimmon Co., Brazil, Ind.—Hoisting Drums.
Cresson, Geo. V., Co., Allegheny Ave., West of 17th St., Philadelphia, Pa.—Ore Concentrators.
Cummings, W. J., Wellston, O.—Miners' Tools.
Curtis & Co. Mfg. Co., 2201 Washington Ave., St. Louis, Mo.—Cranes, Elevators, etc.

Cyclone Drilling Machine Co., Orrville, O.—Mining Drills.
Dake Engine Co., Grand Haven, Mich.—Elevators, Winches and Windlasses.
Dallett, Thomas H., & Co., York St. & Sedgley Ave., Philadelphia, Pa.—Electric Cranes.
Danville Foundry & Machine Co., Danville, Ill.—Mine Cars.
Davis Calyx Drill Co., 128 Broadway, New York.—Core Drills.
Davis, F. M., Iron Works Co., 8th & Larimer Sts., Denver, Col.—Mine Cars, Cages, etc.
Davis-Price Foundry & Machine Co., New Cumberland, W. Va.—Brick Trucks.
Day, J. H., & Co., Cincinnati, O.—Warehouse, etc., Trucks.
Dederick's, P. K., Sons, Albany, N. Y.—Drums, Hand Elevators, etc.
Defiance Box Co., Defiance, O.—Warehouse, etc., Trucks.
De Loach Mill Mfg. Co., Atlanta, Ga.—Logging and Lumber Trucks.
Denver Engineering Works Co., Blake & 30th Sts., Denver Col.—Electric Elevators, Mine Cars, etc.
Dienelt & Eisenhardt, 1308 Howard St., Philadelphia, Pa.—Hydraulic Jacks.
Dietz, Fred, Co., 1102 Madison Ave., Indianapolis, Ind.—Warehouse, etc., Trucks.
Ding's Electro-Magnetic Separator Co., Milwaukee, Wis.—Magnetic Separators.
Dobbie Foundry & Machine Co., Niagara Falls, N. Y.—Cranes, Elevators.
Dodge Cold Storage Co., Nicetown, Philadelphia, Pa.—Coal and Ore Machinery.
Dodge Mfg. Co., Mishawaka, Ind.—Conveyors, Pneumatic Elevators, etc.
Dubuar, J. A., Mfg. Co., Northville, Mich.—Tackle Blocks.
Dudgeon, Richard, 24 Columbia St., New York.—Hydraulic and Screw Jacks.
Duff Mfg. Co., 405 Marion Ave., Allegheny, Pa.—Jacks.
Dunn, Jas. P., 207 Dunham Ave., Cleveland, O.—Chain Hoists.
Durable Wire Rope Co., 28 Atlantic Ave., Boston, Mass.—Wire Rope.
Dyer Bros., 240 Montgomery St., San Francisco, Cal.—Quartz Mills.
Eagle Iron Works, Terre Haute, Ind., Mine Cars, Cages, etc.
Eastern Machinery Co., New Haven, Conn.—Drums, Trucks, etc.
Eaton & Prince Co., Chicago, Ill.—Freight and Passenger Elevators.
Edelmeyer & Morgan Hod Elevator Co., 333 W. 59th St., New York.—Hod Elevators.
Edmonds, F. A., 144 Champlin St., Cleveland, O.—Freight and Passenger Elevators.
Elektron Mfg. Co., Springfield, Mass.—Electric Elevators.
Elkhart Frog & Crossing Works, Elkhart, Ind.—Track Jacks.
Ellison, Wm., & Sons, Mfg. Co., 1018 No. 6th St., St. Louis, Mo.—Mine Cars, Cages, etc.
Empire Engine & Motor Co., Orangeburg, N. Y.—Hoists, Winches, Windlasses, etc.
Erie Car Works, Erie, Pa.—Brick and Clay Cars.
Eureka Tackle Block Co., 442 E. Front St., Cincinnati, O.—Tackle Blocks.
Eureka Mower Co., Utica, N. Y.—Wagon Jacks.
Everhart Brass Works, Scranton, Pa.—Miners' Lamps, etc.
Ewart Mfg. Co., Chicago, Ill.—Sprocket Wheel Chains.
Exeter Machine Works, Pittston, Pa.—Mine Cars, etc.
Fairbanks Co., Broome & Elm Sts., New York.—Trucks.
Fairbanks, Morse & Co., 172 Franklin St., Chicago, Ill.—Jacks, Mine Cars, etc.
Farmers' Handy Wagon Co., Saginaw, Mich.—Logging and Lumber Trucks.

Farquhar, A. B., Co., Ltd., York, Pa.—Warehouse, etc., Trucks.
Farrell Foundry & Machine Co., Ansonia, Conn.—Swing Cranes.
Faunt, Le Roy, & Co., Baltimore, Md.—Freight and Passenger Elevators.
Federal Mfg. Co., American Trust Bldg., Cleveland, O.—Chains.
Fernholtz Brick Machinery Co., Boyle & Old Manchester Aves., St. Louis, Mo.—Brick Trucks.
Fish Bros. Wagon Co., Racine, Wis.—Logging and Lumber Trucks.
Flint-Lomax Electric & Mfg. Co., Denver, Col.—Signaling Apparatus.
Flory, S., Mfg. Co., Bangor, Pa.—Conveyors, Derricks, etc.
Franklin Machine & Tool Co., Franklin, Pa.—Escalators.
Franklin Portable Crane & Hoist Co., Franklin, Pa.—Portable Cranes.
Freeman, J. W., Joplin, Mo.—Winches, Windlasses, etc.
Freese, E. M., & Co., Galion, O.—Brick and Clay Cars.
Frenier, J. H., Rutland, Vt.—Ore Feeders.
Fritsch, Arthur, Foundry & Machine Co., St. Louis, Mo.—Ore Concentrators.
Fulton Iron Works, San Francisco, Cal.—Ore Concentrators, etc.
Gardner Electric Drill & Mchy. Co., Cleveland, O.—Core and Hand Drills.
Gardner Elevator Co., Detroit, Mich.—Freight and Passenger Elevators.
Garland, M., Co., Bay City, Mich.—Conveyors.
Garry Iron & Steel Co., Coe & Lake Sts., Cleveland, O.—Cranes, Trolleys, Tramways, etc. *See adv. page 23.*
General Electric Co., Schenectady, N. Y.—Cranes, Derricks, etc.
General Pneumatic Tool Co., Montour Falls, N. Y.—Pneumatic Cranes, Elevators, etc.
Georgia Car & Mfg. Co., Savannah, Ga.—Trucks, Cars, etc.
Giddings & Lewis Mfg. Co., Fond du Lac, Wis.—Logging and Lumber Trucks.
Gilford Bros., Hudson, N. Y.—Bucket Elevators.
Globe Iron Works, Inc., Stockton, Cal.—Mine Cars, Stamp Mills.
Gold & Silver Extraction Co., Denver, Colo.—Ore Separators.
Goulds Mfg. Co., Seneca Falls, N. Y.—Screw Jacks.
Grand Rapids Hand Screw Co., Grand Rapids, Mich.—Warehouse, etc., Trucks.
Greenwald, I. & E., Co., 720 E. Pearl St., Cincinnati, O.—Elevator Buckets.
Greystone Mfg. Co., Greystone, Conn.—Coil Chains.
Grote Mfg. Co., Evansville, Ind.—Freight and Passenger Elevators.
Grotenrath, Fred, 111 W. Water St., Milwaukee, Wis.—Conveyors, etc.
Hagerstown Foundry Co., Hagerstown, Md.—Lifting Jacks.
Haiss, George Mfg. Co., 141st St. & Rider Ave., New York.—Coal Handling Machinery.
Hallidie-Painter Tramway Co., Fremont & Mission Sts., San Francisco, Cal.—Trolleys, Tramways, etc.
Hammond Mfg. Co., Portland, Ore.—Stamp Mills, etc.
Hanna Engineering Works, 820 Elston Ave., Chicago, Ill.—Pneumatic Elevators.
Hardsocg, Martin, Mfg. Co., Ltd., Allegheny, Pa.—Miners' Tools.
Harman & Hassert, Bloomsburg, Pa.—Mine Cars.
Harrington, Edwin, Son, & Co., Inc., 1503 Pennsylvania Ave., Philadelphia, Pa.—Traveling Cranes, Elevators, etc.
Harvey, H. H., 606 Atlantic Ave., Boston, Mass.—Derricks, Jacks, etc.
Hasenzahl, William, Cincinnati, O.—Hand Drills.
Haskell, Wm. H. Mfg. Co., Pawtucket, R. I.—Dredge Chains.
Haskell & Barker Car Co., Michigan City, Ind.—Mine Cars.
Hassell Iron Works Co., Colorado Springs, Col.—Hand Elevators.
Hathorn Foundry & Machine Co., Mason City, Ia.—Brick and Clay Cars.

Haughton Elevator & Machine Co., Toledo, O.—Elevators.
Hayden-Corbett Chain Co., Columbus, O.—Chains.
Hayden, P. Saddlery Hardware Co., Columbus, O.—Grinding Pans.
Hayward Co., 97 Cedar St., New York.—Derricks, etc.
Hazard Mfg. Co., Wilkesbarre, Pa.—Wire Rope.
Heimann, A., & Bro., Massillon, Ohio.—Mine Cars.
Helmick Foundry & Machine Co., Fairmont, W. Va.—Mine Cars, Tipples.
Hempfield Foundry Co., Ltd., Greensburg, Pa.—Mine Cars.
Henderer's, A. L., Sons, Wilmington, Del.—Jacks.
Hendrie & Bolthoff Mfg. & Supply Co., Denver, Col.—Winches, Windlasses, Mining Cages, etc.
Hercules Electric Drill Co., 32 Broadway, New York.—Electric Drills.
Hendy, Joshua, Machine Works, San Francisco, Cal.—Quartz and Stamp Mills, etc.
Hersey Mfg. Co., South Boston, Mass.—Trolleys and Tramways.
Heyl & Patterson, 51 Water St., Pittsburg, Pa.—Mine Tipples.
Herzler-Henninger, Machine Works, Belleville, Ill.—Mine Cars.
Hinds, Thomas, Malone, N. Y.—Derricks.
Hoffman, Chas. W., Co., 309 W. 36th St., New York.—Freight and Passenger Elevators.
Hoisting and Conveying Machinery Co., 44 N. Elizabeth St., Chicago, Ill. Cranes, Derricks, etc.
Holmes & Blanchard Co., 37 Washington St. N., Boston, Mass. Freight and Passenger Elevators.
Hoopes & Townsend Co., 1330 Buttonwood St., Philadelphia.—Chains.
Horton Mfg. Co., Painesville, O.—Brick and Clay Cars.
Hoshor-Platt Co., 120 Liberty St., New York.—Industrial Railway Equipment.
Howard Iron Works, Buffalo, N. Y.—Freight and Passenger Elevators.
Howe Scale Co., Rutland, Vt.—Trucks.
Howell, R. R., & Co., Minneapolis, Minn.—Jacks.
Howell's Mining Drill Co., Plymouth, Pa.—Hand and Pneumatic Drills.
Hughes Bros., Scranton, Pa.—Miners' Lamps.
Hunt, Alexander E., Scranton, Pa.—Miners' Lamps.
Hunt, C. W., Co., 45 Broadway, New York.—Coal Handling Machinery.
Hyde Windlass Co., Bath, Me.—Winches and Windlasses.
Illinois Iron & Bolt Co., Carpentersville, Ill.—Jacks.
Illinois Malleable Iron Co., 30 West Monroe St., Chicago, Ill.—Elevator Buckets.
Indiana Chain Works, Jeffersonville, Ind.—Chains.
Industrial Works, Bay City, Mich.—Cranes.
Ingersoll-Sergeant Drill Co., 26 Cortlandt St., New York.—Pneumatic Drills, etc.
Interstate Engineering Co., Williamson Bldg., Cleveland, O.—Mine Cars, Conveyors, etc.
Jackson Mfg. Co., Harrisburg, Pa.—Mine Cars, etc.
Jacobs, Chas. C., Bridge & Iron Works, Amboy, Ill.—Elecfric Cranes, Derricks.
Jeffrey Mfg. Co., Columbus, O.—Conveyors, Elevators, etc. *See adv. page 21.*
Johnston Foundry & Machine Co., Reading, Pa., Traveling Cranes.
Jones & Laughlin Steel Co., Pittsburg, Pa.—Chains, Cranes, etc.
Joyce-Cridland Co., Wyandot & Railroad Sts., Dayton, O.—Jacks.
Justice, Philip S., & Co., 14 No. 5th St., Philadelphia, Pa.—Jacks.
Kalamazoo Railway Supply Co., Kalamazoo, Mich.—Jacks, Mine Cars.
Kelly & Jones Co., Pittsburg, Pa.—Miners' Tools.
Kenney & Co., Scottdale, Pa.—Mine Cars, Cages, etc.

Kent Mill Co., 170 Broadway, New York.—Quartz Mills.
Keystone Driller Co., Beaver Falls, Pa.—Samplers or Testers.
Keystone Drop Forge Works, Chester, Pa.—Shackle Hooks.
Kieckhefer, A., Elevator Co., 1026 St. Paul Ave., Milwaukee, Wis.—Freight, Passenger, Hod Elevators.
Kilbourne & Jacobs Mfg. Co., Columbus, Ohio.
Kimball Bros., Council Bluffs, Ia.—Freight and Passenger Elevators.
Kingsland Mfg. Co., 1521 N. 11th St., St. Louis, Mo.—Logging and Lumber Trucks.
Kinkade & Liggett Co., Columbus, O.—Freight and Passenger Elevators.
Kinsley Iron & Machine Co., Canton, Mass.—Screw Jacks.
Klein, Charles C., Marshall & Cambria Sts., Philadelphia, Pa.—Belt Conveyors.
Klemm, E. R., 103 W. Monroe St., Chicago, Ill.—Jacks, Winches and Windlasses.
Knell Air Brake Co., Battle Creek, Mich.—Pneumatic Elevators.
Knight Mfg. Co., Canton, O.—Logging and Lumber Trucks.
Knoxville Foundry & Machine Co., Knoxville, Tenn.—Ore Concentrators.
Kramer Wagon Co., Oil City, Pa.—Logging and Lumber Trucks.
Krogh Mfg. Co., 9 Stevenson St., San Francisco, Cal.—Quartz Mills.
Lake Shore Engine Works, Marquette, Mich.—Derricks.
Lambert Hoisting Engine Co., 115 Poinier St., Newark, N. J.—Hoisting Drums, Elevators, etc.
Lane Bros. Co., Poughkeepsie, N. Y.—Chain Hoists, Wagon Jacks.
Lane Mfg. Co., Montpelier, Vt.—Traveling Cranes, etc.
Lansing Wheelbarrow Co., Lansing, Mich.—Trucks, Mine Cars.
Lazier Gas Engine Co., Buffalo, N. Y.—Pumping Jacks.
Leatheroid Mfg. Co., Kennebunk, Me.—Warehouse, etc., Trucks.
Le Count, Wm. G., So. Norwalk, Conn.—Screw Jacks.
Le Grand Mine Drill Works, Wilkesbarre, Pa.—Steam Drills.
Lehigh Car Wheel & Axle Works, Catasauqua, Pa.—Brick, Clay, Mine Cars.
Leschen, A., & Sons, Rope Co., 920 N. 1st St., St. Louis, Mo.—Derricks, Trolleys, Tramways, etc.
Lewis Foundry & Machine Co., 1001 Bingham St., Pittsburg, Pa.—Cranes.
Lidgerwood Mfg. Co., 96 Liberty St., New York.—Derricks, Elevators.
Lima Locomotive & Machine Co., Lima, O.—Mine Cars, etc.
Lincoln Iron Works, Rutland, Vt.—Cranes, Derricks.
Link-Belt Engineering Co., Nicetown, Philadelphia, Pa.—Link-Belt Conveyors, etc.
Link-Belt Machinery Co., 39th St. & Stewart Ave., Chicago, Ill.—Conveyors, Ore Washers, etc.
Link, E. M., Machinery Co., Erie, Pa.—Logging and Lumber Trucks.
Litchfield Foundry & Machine Co., Litchfield, Ill.—Mine Cars, Electric Elevators, etc.
Llewellyn Iron Works, Los Angeles, Cal.—Ore Concentrators, Stamp Mills.
Locke Steel Belt Co., Bridgeport, Conn.—Sprocket Wheel Chains.
Lombard Iron Works & Supply Co., Augusta, Ga.—Stamp Mills.
Lord, Bowler & Co., 35 Center St., Cleveland, O.—Derricks, Hand Elevators.
Louisville Elevator Co., Louisville, Ky.—Freight and Passenger Elevators.
Lovejoy, T. H., 90 Ohio St., Chicago, Ill.—Screw Jacks.
Lucas, A., & Sons, Inc., Peoria, Ill.—Mining Cages.
Luedinghaus & Espencheid Wagon Co., 1713 N. Broadway, St. Louis, Mo.—Logging and Lumber Trucks.

McCabe Hanger Mfg. Co., 425 W. 25th St., New York.—Trolleys and Tramways.
McCoy, Jos. F., Co., 157 Chambers St., New York.—Jacks.
McCoy-Linn Iron Co., Milesburg, Pa.—Chains.
McFarlane & Co., Denver, Col.—Stamp Mills.
McKay, Jas., & Co., 29th St. & Liberty Ave., Pittsburg, Pa.—Chains.
McKiernan Drill Co., 170 Broadway, New York.—Steam Drills.
McKinney Mfg. Co., Allegheny, Pa.—Trucks.
McLagon Foundry Co., New Haven, Conn.—Screw Jacks.
McLanahan Stone Machine Co., Hollidaysburg, Pa.—Washing Machines.
McLauthlin, Geo. T. Co., 120 Fulton St., Boston, Mass.—Elevators.
McMillan's, W. H., Sons, 153 South St., New York.—Tackle Blocks.
McMyler Mfg. Co., 180 Columbus St., Cleveland, O.—Dock Equipment Machinery.
Macbeth Iron Co., Cleveland, O.—Clam Shell Buckets.
Mackintosh, Hemphill & Co., Pittsburg, Pa.—Hydraulic Cranes.
Macomber & Whyte Rope Co., 19-21 So. Canal St., Chicago, Ill.—Trolleys, Tramways, etc.
Mansfield Engineering Co., Mansfield, O.—Cranes.
Marine Iron Co., Bay City, Mich.—Mine Cars, Cages.
Marine Mfg. & Supply Co., 158 South St., New York.—Winches and Windlasses.
Marion Steam Shovel Co., Marion, O.—Cranes.
Maris Bros., 56th St. & Gray Ave., Philadelphia, Pa.—Cranes, Trolleys, Tramways.
Marseilles Mfg. Co., Marseilles, Ill.—Elevator Boots, Buckets.
Marshall Car Wheel & Foundry Co., Marshall, Tex.—Trucks.
Marshutz & Cantrell, Main & Howard Sts., San Francisco, Cal.—Quartz Mills, etc.
Martin, Henry, Brick Machine Mfg. Co., Lancaster, Pa.—Trucks, Cars.
Marvin Electric Drill Co., Binghamton, N. Y.—Electric Drills.
Maryland Foundry & Machine Co., Baltimore, Md.—Elevators.
Mason, Volney W., & Co., Providence, R. I.—Elevators, Hoists.
Maynard, C. T., & Co., Fairhaven, Vt.—Lifting Jacks.
Mead, John A., & Co., 11 Broadway, New York—Coal Handling Machinery, etc.
Means Foundry & Machine Co., Steubenville, O.—Dryer Cars.
Mecklenburg Iron Works, Charlotte, N. C.—Hoists, Stamp Mills, etc.
Merralls Mill Co., San Francisco, Cal.—Stamp Mills.
Merriman Bros., 162 Commercial St., Boston, Mass.—Blocks.
Messinger Mfg. Co., Tatamy, Pa.—Trucks.
Mey Chain Belting & Engineering Works, 114 Perry St., Buffalo, N. Y. Buckets, Conveyors, Elevators.
Michigan Brick & Tile Machine Co., Morenci, Mich.—Brick Trucks.
Michigan Mfg. & Lumber Co., Holly, Mich.—Trucks.
Michigan Wheelbarrow & Truck Co., Saginaw, Mich.—Trucks.
Milholland, J. & B., Co., 718 5th Ave., Pittsburg, Pa.—Wire Rope.
Millers Falls Co., Millers Falls, Mass.—Screw Jacks.
Mine & Smelter Supply Co., Denver, Col.—Derricks, etc.
Minneapolis Steel & Mchy. Co., 2854 Minnehaha Ave., Minneapolis, Minn.—Mine Tipples.
Moline Elevator Co., Moline, Ill.—Elevators.
Monongahela Iron & Steel Co., Hope Church, Pa.—Chains.
Monongahela Mfg. Co., Monongahela, Pa.—Mine Cars, Cages, Tipples.
Moon Elevator Co., 8th & Mulanphy Sts., St. Louis, Mo.—Elevators.
Morden Frog & Crossing Works, The Rookery, Chicago, Ill.—Track Jacks.
Morgan Construction Co., Worcester, Mass.—Cranes, Trucks.

Morgan Engineering Co., Alliance, O.—Cranes, Derricks.
Morse, Williams & Co., Inc., Philadelphia, Pa.—Elevators. *See adv. page 20.*
Mt. Vernon Car Mfg. Co., Mt. Vernon, Ill.—Cranes, Trucks, Cars.
Moyer, J. W., & Co., 1736 N. Howard St., Philadelphia, Pa.—Cranes, Hoists, Trolleys and Tramways.
Muirhead, John, & Son, Pittston, Pa.—Core Drills.
Mullen, John, & Son, Shamokin, Pa.—Mine Tipples.
Mundy, J. S., 22 Prospect St., Newark, N. J.—Derricks, Trolleys, Tramways, etc.
Munnsville Plow Co., Munnsville, N. Y.—Screw Jacks.
Murray, D. J., Mfg. Co., Wausau, Wis.—Trucks.
Murtaugh, James, 202 E. 42d St., New York.—Elevators.
Myers, F. E., & Bro., Ashland, O.—Pumping Jacks.
Nason Mfg. Co., 71 Beekman St., New York.—Pneumatic Hoists.
National Blower Works, Milwaukee, Wis.—Drier Cars.
National Elevator & Machine Co., Scranton, Pa.—Elevators.
National Fulton Brass Mfg. Co., Detroit, Mich.—Blocks.
National Hoist & Machine Co., 463 W. 22d St., Chicago, Ill.—Derricks, Elevators.
National Iron Works, Inc., Spokane, Wash.—Stamp Mills.
National Steel & Wire Co., New Haven, Conn.—Wire Rope.
Nelsonville Foundry & Machine Co., Nelsonville, O.—Cars, Cages, etc.
New Albany Mfg. Co., New Albany, Ind.—Cranes.
New Castle Forge & Bolt Co., New Castle, Pa.—Chains.
Newell, J. F., & Co., Gardiner, Me.—Jacks.
Newhall Chain, Forge & Iron Co., 15 Murray St., New York.—Chains.
New Jersey Foundry & Machine Co., 9 Murray St., New York.—Coal and Ore Handling Machinery, Trolleys, etc.
New London Vise Works, 20 Division St., New London, Conn.—Jacks.
Ney Mfg. Co., Canton, O.—Hoists.
Niles-Bement-Pond Co., 136 Liberty St., New York.—Cranes, Hoists, Jacks.
Niles Boiler Co., Niles, O.—Core Oven Cars.
Nordyke & Marmon Co., Indianapolis, Ind.—Elevator Boots, Buckets.
Norman & Evans, Lockport, N. Y.—Coal and Ore Handling Machinery.
North Alabama Engineering Co., New Decatur, Ala.—Trolleys, Trucks.
North Penn Iron Co., North Penn Junction, Philadelphia, Pa.—Cranes.
Northern Engineering Works, Detroit, Mich.—Cranes, Elevators, Cars.
Northwestern Iron Works, Seattle, Wash.—Stamp Mills.
Norton, A. O., 236 Congress St., Boston, Mass.—Jacks.
Nutting Truck Co., Faribault, Minn.—Trucks.
Obenberger, J. G., Co., 123 Barclay St., Milwaukee, Wis.—Buckets.
Ohio Ceramic Engineering Co., 50 Fall St., Cleveland, O.—Cars.
Olsen, Tinius & Co., 500 12th St., Philadelphia, Pa.—Hydraulic Hoists.
Oneida Community, Ltd., Niagara Falls, N. Y.—Chains.
Oram, John S., 160 Coe St., Cleveland, O.—Barrel Elevators.
Otis Elevator Co., Yonkers, N. Y.—Elevators, etc.
Ottumwa Iron Works, Ottumwa, Ia.—Cars, Cages, etc.
Parkhurst Bros., & Co., 218 Kentucky Ave., Indianapolis, Ind.—Elevators.
Patch, F. R., Mfg. Co., Rutland, Vt.—Derricks and Channeling Machines.
Pawling & Harnischfeger, Milwaukee, Wis.—Cranes, Hoists, etc.
Paxson, J. W., Co., 1021 N. Delaware Ave., Philadelphia, Pa.—Trucks.
Peacock's Iron Works, Selma, Ala.—Trucks and Cars.
Peck, Stow & Wilcox Co., Southington, Conn.—Jacks.
Pedrick & Ayer Co., Plainfield, N. J.—Cranes, Hoists, etc.
Pelky, W. H., Fair Haven, Vt.—Jacks.

Pennsylvania Iron Works Co., 50th St. & Lancaster Ave., Philadelphia, Pa.—Hoists.
Peteler Portable Railway Mfg. Co., Minneapolis, Minn.—Tracks.
Pettibone, Mulliken & Co., 204 Dearborn St., Chicago, Ill.—Jacks.
Philadelphia Pneumatic Tool Co., 21st St. & Allegheny Ave., Philadelphia, Pa.—Hoists.
Phillips, Doup & Co., 56 Pearl St., Brooklyn, N. Y.—Buckets, Trucks, Cars.
Phillips & McLaren, Pittsburg, Pa.—Grinding Pans.
Phillips Mine & Mill Supply Co., Pittsburg, Pa.—Cars, Miners' Tools.
Pie, Justin J. (Estate of), Osceola Mills, Pa.—Cars.
Plunger Elevator Co., Worcester, Mass.—Elevators.
Phoenix Electrical Mfg. Co., Mansfield, O.—Hoists.
Pilling Air Engine Works, Bucyrus, O.—Hoists.
Pittsburg Tool & Drop Forge Co., Arrott Bldg., Pittsburg, Pa.—Jacks.
Pneumatic Engineering Co., 128 Broadway, New York.—Hoists.
Pollard, Jos. G., 141 Raymond St., Brooklyn, N. Y.—Derricks.
Pollock, Wm. B., Co., Youngstown, O.—Cars.
Poole Engineering & Machine Co., Baltimore, Md.—Hoisting Drums.
Portable Electric Power & Light Co., Jersey City, N. J.—Miners' Lamps.
Portage Lake Foundry & Machine Co., Hancock, Mich.—Stamp Mills.
Port Huron Air Tool Co., Port Huron, Mich.—Hoists.
Port Huron Engine & Thresher Co., Port Huron, Mich.—Chains.
Portland Co., Inc., Portland, Me.—Elevators.
Potts, C. & A., Co., Indianapolis, Ind.—Trucks.
Power & Mining Machinery Co., 52 William St., New York.—Elevators, Cars, Cages, etc.
Preslar-Crawley Mfg. Co., Cincinnati, O.—Drills.
Prox & Brinkman Mfg. Co., Terre Haute, Ind.—Cars.
Puffer-Hubbard Mfg. Co., Minneapolis, Minn.—Trucks.
Queen & Co., Inc., 1010 Chestnut St., Philadelphia, Pa.—Miners' Lamps.
Racine Steel & Iron Mfg. Co., Racine, Wis.—Jacks.
Railway Applances Co., Old Colony Bldg., Chicago, Ill.—Hoists.
Ramapo Iron Works, Hillburn, N. Y.—Cars.
Rand Drill Co., 128 Broadway, New York.—Channeling Machines, Drills, etc. *See adv. page 21.*
Rawson & Morrison Mfg. Co., Cambridgeport, Mass.—Derricks, Hoists.
Raymond, C. W., & Co., Dayton, O.—Trucks and Cars.
Raymond Bros., Impact Pulverizer Co., 143 Laflin St., Chicago, Ill.—Mills, Ore Separators.
Reading Crane & Hoist Works, Reading, Pa.—Cranes, Trolleys, etc.
Reedy, D. V., & Co., Indianapolis, Ind.—Elevators.
Reedy, H. J., Co., Cincinnati, O.—Elevators.
Reedy, J. W., Elevator Mfg. Co., Chicago, Ill.—Elevators.
Reedy Elevator Co., 407 W. 14th St., New York.—Elevators.
Reilly & Fearon, 1145 N. 3d St., Philadelphia, Pa.—Conveyors.
Reno Inclined Elevator Co., 551 W. 35th St., New York.—Escalators.
Rhode Island Elevator & Machine Co., Providence, R. I.—Elevators.
Richmond, A. K., & Son, 511 E. 5th St., Boston, Mass.—Derricks.
Richmond Machine Works, Richmond, Ind.—Trucks.
Ridgway, Craig & Son Co., Coatesville, Pa.—Cranes, Elevators, etc.
Riehle Bros., Testing Machine Co., 1424 N. 9th St., Philadelphia, Pa.—Cranes, Jacks.
Risdon Iron & Locomotive Works, San Francisco, Cal.—Cars, Cages, Stamp Mills, etc.
Rix Compressed Air & Drill Co., 396 Mission St., San Francisco, Cal.—Hoists.
Robins Conveying Belt Co., Park Row Bldg., New York.—Coal and Ore Handling Machinery, etc.

Robinson & Co., Richmond, Ind.—Trucks.
Robinson & Fosbrook, Fieldsboro, N. J.—Chains.
Roebling's, John A., Sons Co., Trenton, N. J.—Cableways.
Rogers Iron Co., Springfield, O.—Cranes.
Ross, Charles, & Son Co., 16-20 Steuben St., Brooklyn, N. Y.—Ore Samplers or Testers.
Round, D., & Son, 2287 Broadway, Cleveland, O.—Chains, Hoists, etc.
Rumsey & Co., Ltd., Seneca Falls, N. Y.—Jacks.
Russell, Albert, & Sons, Co., Newburyport, Mass.—Winches and Windlasses.
Russel Wheel & Foundry Co., Detroit, Mich.—Cranes, Trucks, Cars.
St. Cloud Iron Works, St. Cloud, Minn.—Derricks.
Salmon Iron Co., Freeland, Pa.—Cars.
Scaife, Wm. B., & Sons Co., 221 1st Ave., Pittsburg, Pa.—Cars, Ore Washers, etc.
Scaife Foundry & Machine Co., 28th & Smallman Sts., Pittsburg, Pa.—Winches and Windlasses.
Schriver, O. P., & Co., 208 Elm St., Cincinnati, O.—Trucks.
Schwartz, M., & Son, Chillicothe, O.—Jacks.
Scott's Patent Brick Car Co., Knoxville, Tenn.—Trucks and Cars.
Scranton Supply & Machinery Co., Scranton. Pa.—Miners' Tools.
Sedgwick Machine Works, Poughkeepsie, N. Y.—Elevators and Hoists.
See, A. B., Electric Elevator Co., 220 Broadway, New York.—Elevators.
Sellers, Wm., & Co., Inc., 1600 Hamilton St., Philadelphia, Pa.—Cranes, Hoists.
Shaw Electric Crane Co., Muskegon, Mich.—Cranes.
Sheffer, B. F., Glen Rock, Pa.—Lifting Jacks.
Sheffield Car Co., Three Rivers, Mich.—Cranes, Trucks, Cars.
Shepard, Sidney, & Co., Buffalo, N. Y.—Miners' Lamps.
Shriver, T., & Co., 333 E. 56th St., New York.—Cranes.
Sidney Steel Scraper Co., Sidney, O.—Trucks.
Skillin & Richards Mfg. Co., 147 Fulton St., Chicago, Ill.—Elevator Boots.
Slingsby, H. C., 156 West St., New York.—Trucks.
Smith, I. L., Evansville, Ind.—Trucks.
Smith, Myers & Schnier Co., 621 W. Front St., Cincinnati, O.—Trucks.
Smith, Theodore, & Sons, Co., Foot of Essex St., Jersey City, N. J.—Buckets, Derricks.
Smith, Whitcomb & Cook Co., Barre, Vt.—Cranes, Derricks.
Somers, Fitler & Todd Co., Pittsburg, Pa.—Miners' Lamps, Tools.
Southern Engine & Boiler Works, Inc., Jackson, Tenn.—Trucks.
Speidel, J. G., Reading, Pa.—Cranes, Derricks, etc.
Spicer Mfg. Co., New Philadelphia, O.—Trucks, Mine Cars.
Springfield Elevator & Pump Co., Springfield, Mass.—Elevators.
Standard Chain Co., Frick Bldg., Pittsburg, Pa.—Chains.
Standard Diamond Drill Co., Monadnock Blk., Chicago, Ill.—Core Drills.
Standard Dry Kiln Co., Indianapolis, Ind.—Brick Cars, Trucks.
Standard Machine Works, Newark, N. J.—Lifting Jacks.
Standard Plunger Elevator Co., 1 Broadway, New York.—Elevators.
Standard Railway Equipment Co., Union Trust Bldg., St. Louis, Mo.—Pneumatic Hoists.
Standard Saw Mill Machinery Co., Erie, Pa.—Trucks.
Star Mfg. Co., New Lexington, O.—Mine Cars.
Starr, W. C., & Son, Richmond, Ind.—Chains.
Stearns-Roger Mfg. Co., 1718 California St., Denver, Col.—Concentrators, Stamp Mills.
Steel Cable Engineering Co., 92 State St., Boston, Mass.—Conveyors, Elevators, Cars.

Steele, J. C., & Son, Statesville, N. C.—Brick Cars, Trucks.
Stevenson Co., Wellsville, O.—Brick Cars.
Stillwell-Bierce & Smith-Vaile Co., Dayton, O.—Jacks, Quartz Mills.
Stine, S. B., & Son, Osceola Mills, Pa.—Mining Cars, Cages.
Stokes & Parish Elevator Co., 30th & Chestnut Sts., Philadelphia, Pa.—Elevators.
Storms Mfg. Co., Newark, N. J.—Elevators.
Stowell Mfg. & Foundry Co., South Milwaukee, Wis.—Tackle Blocks.
Stuebner, G. L., Iron Works, 166 3d St., Long Island City, N. Y.—Trolleys, Tramways, etc.
Sullivan Machinery Co., 135 Adams St., Chicago, Ill.—Mine Cars, Cages, etc.
Swett, A. L., Iron Works, Medina, N. Y.—Screw Jacks.
Syracuse Chilled Plow Co., Syracuse, N. Y.—Trucks.
Tamaqua Mfg. Co., Tamaqua, Pa.—Cars, Ore Washers.
Tate, Jones & Co., Empire Bldg., Pittsburg, Pa.—Belt Conveyors.
Taylor & Co., 415 Driggs Ave., Brooklyn, N. Y.—Screw Jacks.
Taylor Iron & Steel Co., High Bridge, N. J.—Buckets, Chains, Elevators.
Taylor, S. G., & Son, 98 Indiana St., Chicago, Ill.—Chains.
Templeton, Kenly & Co., Ltd., The Rookery, Chicago, Ill.—Track Jacks.
Thomas Elevator Co., 138 Washington St., Chicago, Ill.—Hod Elevators.
Thomas & Buckley, Hod Elevator Co., 317 W. 64th St., New York.—Hod Elevators.
Thompson & Boyle Co., Los Angeles, Cal.—Buckets, Quartz Mills.
Tod, William, Co., Youngstown, O.—Hydraulic Cranes.
Towsley, John T., Mfg. Co., Evans & Gest Sts., Cincinnati, O.—Trucks.
Treadwell, M. H., & Co., 95 Liberty St., New York.—Cars.
Trenton Iron Co., Trenton, N. J.—Blocks, Wire Rope.
Trimont Mfg. Co., Roxbury, Mass.—Miners' Tools.
Triumph Ice Machine Co., 610 Baymiller St., Cincinnati, O.—Cranes.
Truax Mfg. Co., Denver, Col.—Mine Cars.
Tucker & Dorsey Mfg. Co., Indianapolis, Ind.—Trucks.
Turl's, John, Sons, 534 W. 28th St., New York.—Cranes, Trolleys, etc.
Turner, Vaughn & Taylor Co., Cuyahoga Falls, Ohio.
Union Hardware Co., Torrington, Conn.—Tackle Blocks.
Union Iron Works, Hoboken, N. J.—Buckets.
Union Iron Works, Inc., Minneapolis, Minn.—Trucks.
Union Iron Works, San Francisco, Cal.—Ore Feeders and Concentrators, Stamp Mills, etc.
Union Iron Works, Inc., Spokane, Wash.—Cages, Mills.
Union Iron Works Co., Selma, Ala.—Trucks.
Union Machine & Boiler Co., 108 River St., Cleveland, O.—Derricks.
United Engineering & Foundry Co., Pittsburg, Pa.—Cranes.
United States Chain Co., Greenfield, Ind.—Coil Chains.
Van Emon Engineering Co., 52 National St., San Francisco, Cal.—Elevators.
Verona Tool Works, Murtland Bldg., Pittsburg, Pa.—Track Jacks.
Vulcan Foundry & Machine Co., New Castle, Pa.—Cranes.
Vulcan Iron Works, 59 Milwaukee Ave., Chicago, Ill.—Derricks.
Vulcan Iron Works, Toledo, O.—Derricks.
Vulcan Iron Works, Wilkesbarre, Pa.—Cranes, Derricks, etc.
Wagner-Palmros Mfg. Co., Fairmont, W. Va.—Hoists, Cars, Mine Tipples.
Walton, P. M., 1023 Germantown Ave., Philadelphia, Pa.—Traveling Cranes.

Warner Elevator Mfg. Co., Spring Grove Ave., Cincinnati, O.—Elevators.
Warsaw Elevator Co., Warsaw, N. Y.—Elevators, Hoists, Trucks.
Warwood Tool Co., Wheeling, W. Va.—Miners' Tools.
Waterbury & Co., Inc., 69 South St., New York.—Wire Rope.
Watson-Stillman Co., 46 Dey St., New York.
Watt Mining Car Wheel Co., Barnesville, O.—Mine Cars.
Weber Gas and Gasoline Engine Co., Kansas City, Mo.—Mine Cars.
Webster Mfg. Co., 1075 W. 15th St., Chicago, Ill.—Elevators, Conveyors.
Weimer Machine Works Co., Lebanon, Pa.—Trucks, Cars.
Weller Mfg. Co., 118 North Ave., Chicago, Ill.—Conveyors, Elevator Buckets, etc.
Wellington Machine Co., Wellington, O.—Trucks, Cars.
Wellman-Seaver-Morgan Co., Cleveland, O.—Charging Cars, Cranes, Hoists.
Wells Bros., & Co., Greenfield, Mass.—Miners' Tools.
Westbrook, J. B., Foundry & Machine Co., Danville, Va.—Trucks.
West End Rolling Mill Co., Lebanon, Pa.—Chains.
Wetherill Separating Co., 68 Broad St., New York.—Ore Separators.
Wharton, Wm., Jr., & Co., 25th St. & Washington Ave., Philadelphia, Pa.—Portable Tracks.
Whitcomb Bros., Barre, Vt.—Cranes, Derricks.
Whitehead & Kales, Randolph & Franklin Sts., Detroit, Mich.—Cranes, Trolleys and Tramways.
Whitehurst, R. W., Co., Norfolk, Va.—Trucks.
Whiting Foundry Equipment Co., Harvey, Ill.—Foundry Cranes, Hoists, etc.
Whitman Agricultural Co., 6900 S. Broadway, St. Louis, Mo.—Trucks.
Whittier Machine Co., South Boston, Mass.—Elevators.
Wickes Bros., Saginaw, Mich.—Pneumatic Hoists.
Wilcox, Crittenden & Co., Middletown, Conn.—Coil Chains.
Wilcox Mfg. Co., Aurora, Ill.—Trolleys and Tramways.
Williamsport Clutch & Pulley Co., Williamsport, Pa.—Elevator Boots and Buckets, Carriers, etc.
Williamsport Wire Rope Co., Williamsport, Pa.—Wire Rope.
Wood, Warren, Paterson, N. J.—Mining Drills.
Wood, R. D., & Co., 400 Chestnut St., Philadelphia, Pa.—Cranes.
Woodhouse, Samuel, 4 Stafford St., Cleveland, O.—Chains.
Wright Wire Co., Worcester, Mass.—Wire Rope.
Wyoming Shovel Works, Wyoming, Pa.—Miners' Tools.
Yale & Towne Mfg. Co., 9 Murray St., New York.—Chain Blocks, etc.
Youngstown Engineering Co., Youngstown, O.—Cranes.
Zering, H., Mfg. Co., 218 Charles St., Cincinnati, O.—Warehouse, etc., Trucks.

The numbers following the articles indicate the headings—not the pages.

Index to Machinery and Appliances.

Aerial Cables ..... See 69
Air Cranes ..... See 36
Air Hoists ..... See 57
Baggage Trucks 71
Barrel Elevators 45
Barrels and Pans, Amalgamating 92
Batteries, Stamp ..... See 119
Belt Conveyors 22
Billet Cars 81
Blocks, Chain Hoisting 1
  Differential Chain 2
  Pulley ..... See 3
  Tackle 3
Brick Cars 82
Brick Trucks 72
Bucket Elevators 46
Buckets, Clam Shell 5
  Coal and Ore 6
  Dredging and Excavating 7
  Elevator 8
Cable Conveyors 23
Cable Railways 9
Cableways Suspension 10
Cages, Mining 97
Cantilever Cranes 28
Carriers and Carriages 11
Cars, Industrial Railway 80
  Billet and Bloom 81
  Brick and Clay 82
  Charging 83
  Core Oven 84
  Drier 85
  Foundry 86
  Mine 87
  Ore ..... See 87
Chain Conveyors 24
Chain Hoisting Blocks 1
Chain Hoists 52
Chains, Cable and Marine 12
  Coil 13
  Crane 14
  Differential Pulley Block 15
  Dredge 16
  Hoist 17
  Log 18
  Sprocket Wheel 19
Channeling Machines 99
Charging Cars 83
Clam Shell Buckets 5
Clay Cars 82

Clay Trucks 72
Coal and Ore Buckets 6
Coal and Ore Handling Machinery 20
Coil Chains 13
Conveyors, Apron ..... See 22
Belt 22
Cable 23
Chain 24
Link-Belt 25
Spiral or Screw 26
Crane Chains 14
Cranes, Air ..... See 36
Cantilever 28
Gantry 29
Hand 30
Hydraulic 31
Jib 32
Locomotive 33
Locomotive, Electric 34
Pillar 35
Pneumatic 36
Portable 37
Swing 38
Traveling 39
Traveling, Electric 40
Wrecking 41
Derricks 42
Diamond Drills ..... See 104
Differential Chain Blocks 2
Differential Pulley Block Chains 15
Dredge Chains 16
Dredging and Excavating Buckets 7
Drier Cars 85
Drills, Mining 103
Core 104
Diamond ..... See 104
Electric 106
Hand 107
Pneumatic 108
Prospecting ..... See 104
Steam 110
Drums, Hoisting 43
Electric Hoists 53
Electric Locomotive Cranes 34
Electric Mining Drills 106
Electric Traveling Cranes 40
Elevators 44
Barrel and Package 45
Bucket 46
Foundry 47
Freight and Passenger 48
Hod 49
Hydraulic ..... See 48
Plunger ..... See 48
Water ..... See 46
Excavating Buckets 7
Factory Trucks 75
Feeders, Ore 113

Foundry Cars 86
Foundry Elevators 47
Freight Elevators 48
Gantry Cranes 29
Grip Hoists 54
Hand Cranes 30
Hand Hoists 55
Hoist Chains 17
Hoisting Drums 43
Hoists, Chain 52
  Electric 53
  Grip 54
  Hand 55
  Hydraulic 56
  Pneumatic 57
  Trolley 58
Hooks, Shackle 68
Hydraulic Cranes 31
Hydraulic Elevators ..... See 48
Hydraulic Hoists 56
Hydraulic Jacks 60
Industrial Railways 79
Jacks 59
  Hydraulic 60
  Lifting 61
  Pneumatic 62
  Pumping 63
  Ratchet 64
  Screw 65
  Track 66
  Wagon 67
Jib Cranes 32
Lacing Machines, Belt 177
Lifting Jacks 61
Link-Belt Conveyors 25
Locomotive Cranes 33
  Electric 34
Log Chains 18
Logging Trucks 74
Lumber Trucks 74
Magnetic Ore Separators 125
Marine Chains 12
Mills, Ore Stamp 119
Mine Cars 87
Mining Cages 97
Mining Machinery 90
Ore Buckets 6
Ore Cars ..... See 87
Ore Concentrators 100
Ore Feeders 113
Ore Handling Machinery 20
Ore Samplers 122
Ore Separators 124
Package Elevators 45
Pans and Barrels, Amalgamating 92
Passenger Elevators 48
Pillar Cranes 35
Plunger Elevators ..... See 48

Pneumatic Cranes..... 36
Pneumatic Hoists..... 57
Pneumatic Jacks..... 62
Pneumatic Mining Drills..... 108
Portable Cranes..... 37
Portable Tracks..... 89
Prospecting Drills.....See 104
Pumping Jacks..... 63
Railways, Cable..... 9
Railways, Industrial..... 79
Screw Jacks..... 65
Separators, Ore 124
Magnetic 125
Shackle Hooks..... 68
Signaling Apparatus..... 126
Spiral Conveyors..... 26
Sprocket Wheel Chains..... 19
Stamp Mills..... 119
Suspension Cableways..... 10
Swing Cranes..... 38
Tackle Blocks..... 3
Testers or Samplers, Ore..... 122
Tipples, Mine..... 127
Tools, Miners'..... 128
Tramways and Trolleys..... 69
Traveling Cranes..... 39
Trolley Hoists..... 58
Trolleys and Tramways..... 69
Wagon Jacks..... 67
Warehouse Trucks..... 75
Washers, Ore..... 129
Water Elevators.....See 46
Wet Grinding Pans..... 115
Winches and Windlasses..... 77
Wire Mill Trucks..... 76
Wire Rope..... 78
Wrecking Cranes..... 41

HOISTING AND CONVEYING MACHINERY.

1 **BLOCKS, CHAIN HOISTING.** In use on chain hoists.

Chisholm & Moore Mfg. Co., Lake near Kirtland St., Cleveland, O.
Dederick's, P. K., Sons, Albany, N. Y.
Dobbie Foundry & Machine Co., Niagara Falls, N. Y.
Harrington, Edwin, Son & Co., Inc., 1503 Pennsylvania Ave., Philadelphia, Pa.
Harvey, H. H., 606 Atlantic Ave., Boston, Mass.
Hoshor-Platt Co., 120 Liberty St., New York.
Merriman Bros., 162 Commercial St., Boston, Mass.
Reading Crane & Hoist Works, Reading, Pa.
Stuebner, G. L., Iron Works, 166 Third St., Long Island City, N. Y.
Yale & Towne Mfg. Co., 9 Murray St., New York.

2 **Differential Chain.**

Boston & Lockport Block Co., 160 Commercial St., Boston.
Chisholm & Moore Mfg. Co., Lake near Kirtland St., Cleveland, Ohio. *See adv. page 18.*
Cohoes Iron Foundry & Machine Co., Cohoes, N. Y.

3 **Tackle.** Sheaves or pulleys mounted within a shell; used with ropes for hoisting.

Boston & Lockport Block Co., 160 Commercial St., Boston.
Byers, John F., Machine Co., Ravenna, O.
Carlin's, Thos., Sons Co., Allegheny, Pa.
Cleveland Block Co., 163 River St., Cleveland, O.
Dobbie Foundry & Machine Co., Niagara Falls, N. Y.
Dubuar, J. A., Mfg. Co., Northville, Mich.
Eureka Tackle Block Co., 442 E. Front St., Cincinnati, O.
Hunt, C. W., Co., 45 Broadway, New York.
Lane Bros., Co., Poughkeepsie, N. Y.
Leschen, A., & Sons Rope Co., 920 N. 1st St., St. Louis, Mo.
Link-Belt Engineering Co., Nicetown, Philadelphia, Pa.
McMillan's, W. H., Sons, 153 South St., New York.
Macomber & Whyte Rope Co., 19-21 S. Canal St., Chicago, Ill.
Merriman Bros., 162 Commercial St., Boston, Mass.
Mundy, J. S., 22 Prospect St., Newark, N. J.
National Fulton Brass Mfg. Co., Detroit, Mich.
Reading Crane & Hoist Works, Reading, Pa.
Stowell Mfg. & Foundry Co., South Milwaukee, Wis.
Stuebner, G. L., Iron Works, 166 3d St., Long Island City, New York.
Trenton Iron Co., Trenton, N. J.
Union Hardware Co., Torrington, Conn.
Weller Mfg. Co., 118 North Ave., Chicago, Ill.

4 BOOTS, ELEVATOR. Receptacles for the spout or conduit of endless belt elevators.

Allis-Chalmers Co., New York Life Bldg., Chicago, Ill.
Bethlehem Foundry & Machine Co., So. Bethlehem, Pa.
Borden & Selleck Co., 48 Lake St., Chicago, Ill.
Buhl Malleable Co., Wight & Adair Sts., Detroit, Mich.
Dobbie Foundry & Machine Co., Niagara Falls, N. Y.
Caldwell, H. W., & Son, Co., Western Ave. & 17th St., Chicago.
Case Mfg. Co., Columbus, O.
Chain Belt Co., 766 Park St., Milwaukee, Wis.
Dodge Mfg. Co., Mishawaka, Ind.
Grotenrath, Fred., 111 Water St., Milwaukee, Wis.
Harvey, H. H., 606 Atlantic Ave., Boston, Mass.
Jeffrey Mfg. Co., Columbus, Ohio. *See adv. page 21.*
Interstate Engineering Co., Williamson Bldg., Cleveland, O.
Link-Belt Engineering Co., Nicetown, Philadelphia, Pa.
Marseilles Mfg. Co., Marseilles, Ill.
Williamsport Clutch & Pulley Co., Williamsport, Pa.

5 BUCKETS, CLAM SHELL. Dredge scoops shaped somewhat like a clam shell.

Dobbie Foundry & Machine Co., Niagara Falls, N. Y.
Exeter Machine Works, Pittston, Pa.
Garry Iron & Steel Co., Coe & Lake Sts., Cleveland, Ohio.
Jeffrey Mfg. Co., Columbus, Ohio.
McMyler Mfg. Co., 119 Columbus St., Cleveland, O.
Macbeth Iron Co., Cleveland, O.
Obenberger, J. G., Co., 123 Barclay St., Milwaukee, Wis.
Smith, Theodore, & Sons Co., Foot of Essex St., Jersey City, N. J.
Wellman-Seaver-Morgan Co., Cleveland, O.

6 Coal and Ore. For hoisting in mines.

Allis-Chalmers Co., New York Life Bldg., Chicago, Ill.
Bartlett, C. O., & Snow Co., French & Winter Sts., Cleveland.
Chain Belt Co., 766 Park St., Milwaukee, Wis.
Clark, W. J., Co., Salem, O.
Davis, F. M., Iron Works Co., 8th & Larimer Sts., Denver, Col.
Denver Engineering Works Co., Blake & 30th Sts., Denver, Col.
Dobbie Foundry & Machine Co., Niagara Falls, N. Y.
Garry Iron & Steel Co., Coe & Lake Sts., Cleveland, Ohio.
Haiss, George, Mfg. Co., 141st St. & Rider Ave., New York.
Jeffrey Mfg. Co., Columbus, Ohio. *See adv. page 21.*
McMyler Mfg. Co., 119 Columbus St., Cleveland, O.
Jeffrey Mfg. Co., Columbus, O. *See adv. page 122.*
Obenberger, J. G., & Co., 123 Barclay St., Milwaukee, Wis.
Phillips, Doup & Co., 56 Pearl St., Brooklyn, N. Y.
Power & Mining Machinery Co., 52 William St., New York.
Stuebner, G. L., Iron Works, 166 3d St., Long Island City, N. Y.
Thompson & Boyle Co., Los Angeles, Cal.
Union Iron Works, Hoboken, N. J.
Vulcan Iron Works, Wilkesbarre, Pa.

7 Dredging and Excavating. In use on steam shovels.

Hayward Co., 97 Cedar St., New York.
Jeffrey Mfg. Co., Columbus, O.

BUCKETS, DREDGING, continued.

Power & Mining Machinery Co., 52 William St., New York.
Smith, Theodore, & Sons Co., Foot of Essex St., Jersey City, N. J.
Union Iron Works, Hoboken, N. J.

8 **Elevator.** Receptacles or buckets for elevators of the endless belt or chain variety.

Avery Stamping Co., Cleveland, O.
Bartlett, C. O., & Snow Co., French & Winter Sts., Cleveland, O.
Bethlehem Foundry & Machine Co., South Bethlehem, Pa.
Brown Hoisting Machinery Co., 1345 St. Clair St., Cleveland, O.
Buhl Malleable Co., Wight & Adair Sts., Detroit, Mich.
Caldwell, H. W., & Son Co., Western Ave. & 17th St., Chicago.
Carlin's, Thomas, Sons, Co., Allegheny, Pa.
Case Mfg. Co., Columbus, O.
Chain Belt Co., 766 Park St., Milwaukee, Wis.
Clark, W. J., Co., Salem, O.
Cleveland Elevator Bucket Co., 225 St. Clair St., Cleveland, O.
Dobbie Foundry & Machine Co., Niagara Falls, N. Y.
Flory, S., Mfg. Co., Bangor, Pa.
Greenwald, I. & E., Co., 720 E. Pearl St., Cincinnati, O.
Grotenrath, Fred., 111 W. Water St., Milwaukee, Wis.
Hendy, Joshua, Machine Works, San Francisco, Cal.
Hoshor-Platt Co., 120 Liberty St., New York.
Hunt, C. W., Co., 45 Broadway, New York.
Illinois Malleable Iron Co., 30 W. Monroe St., Chicago, Ill.
Interstate Engineering Co., Williamson Bldg., Cleveland, O.
Jeffrey Mfg. Co., Columbus, O.
Link-Belt Engineering Co., Nicetown, Philadelphia, Pa.
Marseilles Mfg. Co., Marseilles, Ill.
Mey Chain Belt Engineering Works, 114 Perry St., Buffalo.
Mundy, J. S., 22 Prospect St., Newark, N. J.
Nordyke & Marmon Co., Indianapolis, Ind.
Power & Mining Machinery Co., 52 William St., New York.
Stuebner, G. L., Iron Works, 166 3d St., Long Island City, N. Y.
Taylor Iron & Steel Co., High Bridge, N. J.
Weller Mfg. Co., 118 North Ave., Chicago, Ill.
Williamsport Clutch & Pulley Co., Williamsport, Pa.

9 **CABLE RAILWAYS.**

Brown Hoisting Machinery Co., 1345 St. Clair St., Cleveland, O.
Dodge Coal Storage Co., Nicetown, Philadelphia, Pa.
Hoshor-Platt Co., 120 Liberty St., New York.
Hunt, C. W., Co., 45 Broadway, New York.

10 **CABLEWAYS, SUSPENSION.** Used in quarries, etc.

Broderick & Bascom Rope Co., 809 N. Main St., St. Louis, Mo.
Brown Hoisting Machinery Co., 1345 St. Clair St., Cleveland, O.
Flory, S., Mfg. Co., Bangor, Pa.
Leschen, A., & Sons Rope Co., 920 N. 1st St., St. Louis, Mo.
Lidgerwood Mfg. Co., 96 Liberty St., New York.
Macomber & Whyte Rope Co., 19-21 S. Canal St., Chicago, Ill.
Mundy, J. S., 22 Prospect St., Newark, N. J.
Roebling's, Jno. A. Sons Co., Trenton, N. J.

11 CARRIERS AND CARRIAGES. For conveying automatically.

Flory, S., Mfg. Co., Bangor, Pa.
Hoshor-Platt Co., 120 Liberty St., New York.
Hunt, C. W., Co., 45 Broadway, New York.
Jeffrey Mfg. Co., Columbus, Ohio. *See adv. page 21.*
Lidgerwood Mfg. Co., 96 Liberty St., New York.
Link-Belt Engineering Co., Nicetown, Philadelphia, Pa.
Robins Conveying Belt Co., Park Row Bldg., New York.
Turl's, John, Sons, 534 W. 28th St., New York.
Williamsport Clutch & Pulley Co., Williamsport, Pa.
Yale & Towne Mfg. Co., 9 Murray St., New York.

12 CHAINS, CABLE AND MARINE.

Bradlee & Co., 1621 Beach Ave., Philadelphia, Pa.
Buhl Malleable Co., Wight & Adair Sts., Detroit, Mich.
Carr, Joseph B., Co., Troy, N. Y.
Chillcott-Evans Chain Co., 652 Preble Ave., Allegheny, Pa.
Columbus Chain Co., Columbus, O.
Federal Mfg. Co., American Trust Bldg., Cleveland, O.
Hayden-Corbett Chain Co., Columbus, O.
Jones & Laughlin Steel Co., Pittsburg, Pa.
Monongahela Iron & Steel Co., Hope Church, Pa.
Round, D., & Son, 2287 Broadway, Cleveland, O.
Standard Chain Co., Frick Bldg., Pittsburg, Pa.

13 Coil.

Bradlee & Co., 1621 Beach Ave., Philadelphia, Pa.
Bridgeport Chain Co., Bridgeport, Conn.
Columbus Chain Co., Columbus, O.
Greystone Mfg. Co., Greystone, Conn.
Hayden-Corbett Chain Co., Columbus, O.
Indiana Chain Works, Jeffersonville, Ind.
Jeffrey Mfg. Co., Columbus, Ohio.
Jones & Laughlin Steel Co., Pittsburg, Pa.
McCoy-Linn Iron Co., Milesburg, Pa.
McKay, Jas., & Co., 29th St. & Liberty Ave., Pittsburg, Pa.
New Castle Forge & Bolt Co., New Castle, Pa.
Oneida Community, Ltd., Niagara Falls, N. Y.
Round, D., & Son, 2287 Broadway, Cleveland, O.
Standard Chain Co., Frick Bldg., Pittsburg, Pa.
Starr, W. C., & Son, Richmond, Ind.
Taylor, S. G., & Son, Inc., 98 Indiana St., Chicago, Ill.
United States Chain Co., Greenfield, Ind.
West End Rolling Mill Co., Lebanon, Pa.
Wilcox, Crittenden & Co., Middletown, Conn.
Woodhouse, Samuel, 4 Stafford St., Cleveland, O.

14 Crane.

Bradlee & Co., 1621 Beach Ave., Philadelphia, Pa.
Hoopes & Townsend Co., 1330 Buttonwood St., Philadelphia.
Carr, Joseph B., Co., Troy, N. Y.
Chillcott-Evans Chain Co., 652 Preble Ave., Allegheny, Pa.
Columbus Chain Co., Columbus, O.
Hayden-Corbett Chain Co., Columbus, O.
Jones & Laughlin Steel Co., Pittsburg, Pa.
McKay, Jas., & Co., 29th St. & Liberty Ave., Pittsburg, Pa.
New Castle Forge & Bolt Co., New Castle, Pa.

CHAINS, CRANE, continued.

Newhall Chain, Forge & Iron Co., 15 Murray St., New York.
Robinson & Fosbrook, Fieldsboro, N. J.
Round, D., & Son, 2287 Broadway, Cleveland, O.
Standard Chain Co., Frick Bldg., Pittsburg, Pa.
Starr, W. C., & Son, Richmond, Ind.
Taylor, S. G., & Son, Inc., 98 Indiana St., Chicago, Ill.
West End Rolling Mill Co., Lebanon, Pa.
Woodhouse, Samuel, 4 Stafford St., Cleveland, O.

15 Differential Pulley Block.

Columbus Chain Co., Columbus, O.
Round, D., & Son, 2287 Broadway, Cleveland, O.
Standard Chain Co., Frick Bldg., Pittsburg, Pa.
Taylor, S. G., & Son, Inc., 98 Indiana St., Chicago, Ill.
West End Rolling Mill Co., Lebanon, Pa.
Woodhouse, Samuel, 4 Stafford St., Cleveland, O.

16 Dredge.

Bradlee & Co., 1621 Beach Ave., Philadelphia, Pa.
Buhl Malleable Co., Wight & Adair Sts., Detroit, Mich.
Carr, Jos. B., Co., Troy, N. Y.
Chillcott-Evans Chain Co., 652 Preble St., Allegheny, Pa.
Columbus Chain Co., Columbus, O.
Haskell, Wm. H., Mfg. Co., Pawtucket, R. I.
Hayden-Corbett Chain Co., Columbus, O.
Hoopes & Townsend Co., 1330 Buttonwood St., Philadelphia.
Jeffrey Mfg. Co., Columbus, O.
Monongahela Iron & Steel Co., Hope Church, Pa.
New Castle Forge & Bolt Co., New Castle, Pa.
Newhall Chain, Forge & Iron Co., 15 Murray St., New York.
Robinson & Fosbrook Fieldsboro, N. J.
Round, D., & Son, 2287 Broadway, Cleveland, O.
Standard Chain Co., Frick Bldg., Pittsburg, Pa.
Taylor, S. G., & Son, Inc., 98 Indiana St., Chicago, Ill.
West End Rolling Mill Co., Lebanon, Pa.
Woodhouse, Samuel, 4 Stafford St., Cleveland, O.

17 Hoist.

Federal Mfg. Co., American Trust Bldg., Cleveland, O.
Jeffrey Mfg. Co., Columbus, Ohio. *See adv. page 21.*
Newhall Chain, Forge & Iron Co., 15 Murray St., New York.

18 Log.

Buhl Malleable Co., Wight & Adair Sts., Detroit, Mich.
Carr, Joseph B., Co., Troy, N. Y.
Columbus Chain Co., Columbus, O.
Hayden-Corbett Chain Co., Columbus, O.
Hoopes & Townsend Co., 1330 Buttonwood St., Philadelphia.
Indiana Chain Works, Jeffersonville, Ind.
Jeffrey Mfg. Co., Columbus, Ohio. *See adv. page 21.*
Jones & Laughlin Steel Co., Pittsburg, Pa.
McCoy-Linn Iron Co., Milesburg, Pa.
Oneida Community, Ltd., Niagara Falls, N. Y.
Robinson & Fosbrook, Fieldsboro, N. J.
Starr, W. C., & Son, Richmond, Ind.

CHAINS, LOG, continued.

Round, D., & Son, 2287 Broadway, Cleveland, O.
Standard Chain Co., Frick Bldg., Pittsburg, Pa.
Taylor, S. G., & Son, Inc., 98 Indiana St., Chicago, Ill.
West End Rolling Mill Co., Lebanon, Pa.

19 **Sprocket Wheel.**

Boston Gear Works, 152 Purchase St., Boston, Mass.
Buhl Malleable Co., Wight & Adair Sts., Detroit, Mich.
Chain Belt Co., 766 Park St., Milwaukee, Wis.
Columbus Chain Co., Columbus, O.
Dodge Mfg. Co., Mishawaka, Ind.
Ewart Mfg. Co., Chicago, Ill.
Federal Mfg. Co., American Trust Bldg., Cleveland, O.
Hayden-Corbett Chain Co., Columbus, O.
Interstate Engineering Co., Williamson Bldg., Cleveland, O.
Jeffrey Mfg. Co., Columbus, O.
Jones & Laughlin Steel Co., Pittsburg, Pa.
Locke Steel Belt Co., Bridgeport, Conn.
Port Huron Engine & Thresher Co., Port Huron, Mich.
Round, D., & Son, 2287 Broadway, Cleveland, O.
Standard Chain Co., Frick Bldg., Pittsburg, Pa.
Taylor Iron & Steel Co., High Bridge, N. J.
West End Rolling Mill Co. & Chain Works, Lebanon, Pa.

20 **COAL AND ORE HANDLING MACHINERY.**

Bronder, G. A., 229 Broadway, New York.
Brown Hoisting Machinery Co., 1345 St. Clair St., Cleveland.
Buhl Malleable Co., Wight & Adair Sts., Detroit, Mich.
Carlin's, Thomas, Sons, Co., Allegheny, Pa.
Dodge Coal Storage Co., Nicetown, Philadelphia, Pa.
Exeter Machine Works, Pittston, Pa.
Haiss, George, Mfg. Co., 141st St. & Rider Ave., New York.
Hunt, C. W., Co., 45 Broadway, New York.
Jeffrey Mfg. Co., Columbus, Ohio. *See adv. page 21.*
Lidgerwood Mfg. Co., 96 Liberty St., New York.
Link-Belt Engineering Co., Nicetown, Philadelphia, Pa.
McMyler Mfg. Co., 119 Columbus St., Cleveland, O.
Mead, John A., & Co., 11 Broadway, New York.
New Jersey Foundry & Machine Co., 9 Murray St., New York.
Norman & Evans, Lockport, N. Y.
Robins Conveying Belt Co., Park Row Bldg., New York.
Wellman-Seaver-Morgan Co., Cleveland, O.

21 **CONVEYORS, APRON.** See 22, Belt Conveyors.

22 **Belt.** Which employ belting of cotton or rubber running from pulleys placed at intervals.

Allis-Chalmers Co., New York Life Bldg., Chicago, Ill.
Bartlett, C. O., & Snow Co., French & Winter Sts., Cleveland.
Bethlehem Foundry & Machine Co., South Bethlehem, Pa.
Bonnot Co., Canton, O.
Buhl Malleable Co., Wight & Adair Sts., Detroit, Mich.
Chain Belt Co., 766 Park St., Milwaukee, Wis.
Dodge Mfg. Co., Mishawaka, Ind.

CONVEYORS, BELT, continued.

Flory, S., Mfg. Co., Bangor, Pa.
Grotenrath, Fred., 111 W. Water St., Milwaukee, Wis.
Hunt, C. W., Co., 45 Broadway, New York.
Jeffrey Mfg. Co., Columbus, Ohio. *See adv. page 21.*
Klein, Charles C., Marshall & Cambria Sts., Philadelphia, Pa.
Link-Belt Machinery Co., 39th St. & Stewart Ave., Chicago, Ill.
Reilly & Fearon, 1145 N. 3d St., Philadelphia, Pa.
Robins Conveying Belt Co., Park Row Bldg., New York.
Steel Cable Engineering Co., 92 State St., Boston, Mass.
Tate, Jones & Co., Empire Bldg., Pittsburg, Pa.
Webster Mfg. Co., 1075 W. 15th St., Chicago, Ill.
Weller Mfg. Co., 118 North Ave., Chicago, Ill.

23 **Cable.**

Garland, M., Co., Bay City, Mich.
Jeffrey Mfg. Co., Columbus, Ohio. *See adv. page 21.*
Mey Chain Belting & Engineering Works, 114 Perry St., Buffalo, N. Y.

24 **Chain.**

Bartlett, C. O., & Snow Co., French & Winter Sts., Cleveland.
Buhl Malleable Co., Wight & Adair Sts., Detroit, Mich.
Dodge Mfg. Co., Mishawaka, Ind.
Garland, M., Co., Bay City, Mich.
Interstate Engineering Co., Williamson Bldg., Cleveland, O.
Jeffrey Mfg. Co., Columbus, O.
Link-Belt Machinery Co., 39th St. & Stewart Ave., Chicago, Ill.
Mey Chain Belting & Engineering Works, 114 Perry St., Buffalo, N. Y.
Weller Mfg. Co., 118 North Ave., Chicago, Ill.

25 **Link-Belt.**

Buhl Malleable Co., Wight & Adair Sts., Detroit, Mich.
Chain Belt Co., 766 Park St., Milwaukee, Wis.
Grotenrath, Fred., 111 W. Water St., Milwaukee, Wis.
Interstate Engineering Co., Williamson Bldg., Cleveland, O.
Jeffrey Mfg. Co., Columbus, Ohio.
Link-Belt Engineering Co., Nicetown, Philadelphia, Pa.
Link-Belt Machinery Co., 39th St. & Stewart Ave., Chicago, Ill.
Mey Chain Belting & Engineering Works, 114 Perry St., Buffalo, N. Y.

26 **Spiral or Screw.** Vertical chutes of spiral form.

American Tool & Machine Co., 109 Beach St., Boston, Mass.
Bartlett, C. O., & Snow Co., French & Winter Sts., Cleveland.
Buhl Malleable Co., Wight & Adair Sts., Detroit, Mich.
Caldwell, H. W., & Son, 17th St. & Western Ave., Chicago, Ill.
Dodge Mfg. Co., Mishawaka, Ind.
Interstate Engineering Co., Williamson Bldg., Cleveland, O.
Jeffrey Mfg. Co., Columbus, O.
Link-Belt Machinery Co., 39th St. & Stewart Ave., Chicago, Ill.
Weller Mfg. Co., 118 North Ave., Chicago, Ill.

27 **CRANES, AIR.** See 36, Pneumatic Cranes.

CRANES, continued.

28 Cantilever. Supported by bracket-like trusses.

Brown Hoisting Machinery Co., 1345 St. Clair St., Cleveland, O.
Northern Engineering Works, Detroit, Mich.

29 Gantry. Traveling cranes mounted on posts or legs for yard use.

Alliance Machine Co., Alliance, O.
Brown Hoisting Machinery Co., 1345 St. Clair St., Cleveland.
Maris Bros., 56th St. & Gray Ave., Philadelphia, Pa.
Morgan Engineering Co., Alliance, O.
North Penn Iron Co., North Penn Junction, Philadelphia, Pa.
Northern Engineering Works, Detroit, Mich.
Russel Wheel & Foundry Co., Detroit, Mich.
Sellers, William, & Co., Inc., 1600 Hamilton St., Philadelphia.

30 Hand. Operated by hand.

Alliance Machine Co., Alliance, O.
Box, Alfred, Co., Front & Poplar Sts., Philadelphia, Pa.
Brown Hoisting Machinery Co., 1345 St. Clair St., Cleveland.
Browning Engineering Co., Collinwood, O.
Byram & Co., Inc., 435 Guoin St., Detroit, Mich.
Case Mfg. Co., Columbus, O.
Chisholm & Moore Mfg. Co., Lake, near Kirtlandt St., Cleveland, Ohio.
Dobbie Foundry & Machine Co., Niagara Falls, N. Y.
Garry Iron & Steel Co., Coe & Lake Sts., Cleveland, Ohio. *See adv. page 23.*
Lewis Foundry & Machine Co., 1001 Bingham St., Pittsburg.
Harrington, Edwin Son, & Co., Inc., 1503 Pennsylvania Ave., Philadelphia, Pa.
Maris Bros., 56th St. & Gray Ave., Philadelphia, Pa.
Moyer, J. W., & Co., 1736 N. Howard St., Philadelphia, Pa.
Niles-Bement-Pond Co., 136 Liberty St., New York.
Northern Engineering Works, Detroit, Mich.
Pawling & Harnischfeger, Milwaukee, Wis.
Reading Crane & Hoist Works, Reading, Pa.
Sellers, William, & Co., Inc., 1600 Hamilton St., Philadelphia.
Speidel, J. G., Reading, Pa.
Turl's, John, Sons, 534 W. 28th St., New York.
Whiting Foundry Equipment Co., Harvey, Ill.
Yale & Towne Mfg. Co., 9 Murray St., New York.

31 Hydraulic. Operated by hydraulic pressure.

Alliance Machine Co., Alliance, O.
Chambersburg Engineering Co., Chambersburg, Pa.
Craig, Ridgway & Son, Co., Coatesville, Pa.
Lewis Foundry & Machine Co., 1001 Bingham St., Pittsburg.
Mackintosh, Hemphill & Co., Pittsburg, Pa.
Morgan Construction Co., Worcester, Mass.
Morgan Engineering Co., Alliance, O.
Northern Engineering Works, Detroit, Mich.
Ridgway, Craig, & Son, Co., Coatesville, Pa.
Riehle Bros., Testing Machine Co., 1424 N. 9th St., Philda.
Sellers, William, & Co., Inc., 1600 Hamilton St., Philadelphia.
Tod, William, Co., Youngstown, O.

CRANES, HYDRAULIC, continued.

United Engineering & Foundry Co., Pittsburg, Pa.
Watson-Stillman Co., 46 Dey St., New York.
Whiting Foundry Equipment Co., Harvey, Ill.
Wood, R. D., & Co., 400 Chestnut St., Philadelphia, Pa.

32 Jib. Having a swinging boom.

Alliance Machine Co., Alliance, O.
Box, Alfred, Co., Front & Poplar Sts., Philadelphia, Pa.
Brown Hoisting Machinery Co., 1345 St. Clair St., Cleveland.
Browning Engineering Co., Collinwood, O.
Byram & Co., Inc., 435 Guoin St., Detroit, Mich.
Case Mfg. Co., Columbus, O.
Cleveland Crane & Car Co., Wickliffe, O.
Contractors Plant Mfg. Co., 127 Erie St., Buffalo, N. Y.
Dobbie Foundry & Machine Co., Niagara Falls, N. Y.
Garry Iron & Steel Co., Coe & Lake Sts., Cleveland, Ohio.
Harrington, Edwin, Son & Co., Inc., 1503 Pennsylvania Ave., Philadelphia, Pa.
Hoisting & Conveying Machinery Co., 44 N. Elizabeth St., Chicago, Ill.
Industrial Works, Bay City, Mich.
Jones & Laughlin Steel Co., Pittsburg, Pa.
Lewis Foundry & Machine Co., 1001 Bingham St., Pittsburg.
McMyler Mfg. Co., 119 Columbus St., Cleveland, O.
Maris Bros., 56th St. & Gray Ave., Philadelphia, Pa.
Morgan Construction Co., Worcester, Mass.
Morgan Engineering Co., Alliance, O.
New Jersey Foundry & Machine Co., 9 Murray St., New York.
Niles-Bement-Pond Co., 136 Liberty St., New York.
Northern Engineering Works, Detroit, Mich.
Pedrick & Ayer Co., Plainfield, N. J.
Ridgway, Craig, & Son, Co., Coatesville, Pa.
Sellers, Wm., & Co., Inc., 1600 Hamilton St., Philadelphia, Pa.
Turl's, John, Sons, 534 W. 28th St., New York.
United Engineering & Foundry Co., Pittsburg, Pa.
Vulcan Foundry & Machine Co., New Castle, Pa.
Whitehead & Kales Iron Works, Randolph & Franklin Sts., Detroit, Mich.
Whiting Foundry Equipment Co., Harvey, Ill.
Wood, R. D., & Co., 400 Chestnut St., Philadelphia, Pa.

33 Locomotive.

American Hoist & Derrick Co., St. Paul, Minn.
Brown Hoisting Machinery Co., 1345 St. Clair St., Cleveland.
Bullock Electric Mfg. Co., Cincinnati, O.
Browning Engineering Co., Collinwood, O.
Case Mfg. Co., Columbus, O.
Cleveland Crane & Car Co., Wickliffe, O.
Dodge Coal Storage Co., Nicetown, Philadelphia, Pa.
Industrial Works, Bay City, Mich.
Morgan Engineering Co., Alliance, O.
New Jersey Foundry & Machine Co., 9 Murray St., New York.
Northern Engineering Works, Detroit, Mich.
North Penn Iron Co., North Penn Junction, Philadelphia, Pa.
Vulcan Foundry & Machine Co., New Castle, Pa.
Whiting Foundry Equipment Co., Harvey, Ill.

CRANES, LOCOMOTIVE, continued.

34 ELECTRIC.

Alliance Machine Co., Alliance, O.
Brown Hoisting Machinery Co., 1345 St. Clair St., Cleveland.
Cleveland Crane & Car Co., Wickliffe, O.
Garry Iron & Steel Co., Coe & Lake Sts., Cleveland, Ohio.
Industrial Works, Bay City, Mich.
Northern Engineering Works, Detroit, Mich.
North Penn Iron Co., North Penn Junction, Philadelphia, Pa.

35 **Pillar.** In which the movable arm is fastened to a pillar or post.

Alliance Machine Co., Alliance, O.
Brown Hoisting Machinery Co., 1345 St. Clair St., Cleveland.
Garry Iron & Steel Co., Coe & Lake Sts., Cleveland, Ohio.
Industrial Works, Bay City, Mich.
Morgan Engineering Co., Alliance, O.
Northern Engineering Works, Detroit, Mich.
Vulcan Foundry & Machine Co., New Castle, Pa.
Whiting Foundry Equipment Co., Harvey, Ill.

36 **Pneumatic.** Operated by compressed air.

Chicago Pneumatic Tool Co., Fisher Bldg., Chicago, Ill.
Curtis & Co. Mfg. Co., 2201 Washington Ave., St. Louis, Mo.
Garry Iron & Steel Co., Coe & Lake Sts., Cleveland, Ohio. *See adv. page 23.*
General Pneumatic Tool Co., Montour Falls, N. Y.
Maris Bros., 56th St. & Gray Ave., Philadelphia, Pa.
Northern Engineering Works, Detroit, Mich.
Pedrick & Ayer Co., Plainfield, N. J.
Ridgway, Craig, & Son Co., Coatesville, Pa.
Triumph Ice Machine Co., 610 Baymiller St., Cincinnati, O.
Whiting Foundry Equipment Co., Harvey, Ill.

37 **Portable.** Mounted on wheels for easy transportation in machine shops, etc.

Franklin Portable Crane & Hoist Co., Franklin, Pa.
Garry Iron & Steel Co., Coe & Lake Sts., Cleveland, Ohio.

38 **Swing.** See 32, Jib Cranes.
Alliance Machine Co., Alliance, O.
Chambersburg Engineering Co., Chambersburg, Pa.
Farrell Foundry & Machine Co., Ansonia, Conn.
Garry Iron & Steel Co., Coe & Lake Sts., Cleveland, Ohio.
Lincoln Iron Works, Rutland, Vt.
Maris Bros., 56th St. & Gray Ave., Philadelphia, Pa.
Niles-Bement-Pond Co., 136 Liberty St., New York.
Ridgway, Craig, & Son Co., Coatesville, Pa.
Sellers, Wm., & Co., Inc., 1600 Hamilton St., Philadelphia, Pa.
Vulcan Iron Works, Wilkesbarre, Pa.

39 **Travelling.** Which run on trolleys usually placed overhead.

Alliance Machine Co., Alliance, O.
Bethlehem Foundry & Machine Co., South Bethlehem, Pa.
Boston Bridge Works, 47 Winter St., Boston, Mass.
Box, Alfred, Co., Front & Poplar Sts., Philadelphia, Pa.
Brown Hoisting Machinery Co., 1345 St. Clair St., Cleveland.

CRANES, TRAVELING, continued

Browning Engineering Co., Collinwood, O.
Byram & Co., Inc., 435 Guoin St., Detroit, Mich.
Case Mfg. Co., Columbus, O.
Chambersburg Engineering Co., Chambersburg, Pa.
Chicago Pneumatic Tool Co., Fisher Bldg., Chicago, Ill.
Chisholm & Moore Mfg. Co., Lake, near Kirtland St., Cleveland, Ohio.
Cleveland Crane & Car Co., Wickliffe, O.
Curtis & Co., Mfg. Co., 2201 Washington Ave., St. Louis, Mo.
Dobbie Foundry & Machine Co., Niagara Falls, N. Y.
Garry Iron & Steel Co., Coe & Lake Sts., Cleveland, Ohio.
General Electric Co., Schenectady, N. Y.
Harrington, Edwin, Son & Co., Inc., 1503 Pennsylvania Ave., Philadelphia, Pa.
Industrial Works, Bay City, Mich.
Johnston Foundry & Machine Co., Reading, Pa.
Lane Mfg. Co., Montpelier, Vt.
Mansfield Engineering Co., Mansfield, O.
Maris Bros., 56th St. & Gray Ave., Philadelphia, Pa.
Morgan Construction Co., Worcester, Mass.
Morgan Engineering Co., Alliance, O.
New Albany Mfg. Co., New Albany, Ind.
New Jersey Foundry & Machine Co., 9 Murray St., New York.
Niles-Bement-Pond Co., 136 Liberty St., New York.
Northern Engineering Works, Detroit, Mich.
North Penn Iron Co., North Penn Junction, Philadelphia, Pa.
Pawling & Harnischfeger, Milwaukee, Wis.
Reading Crane & Hoist Works, Reading, Pa.
Sellers, Wm., & Co., Inc., 1600 Hamilton St., Philadelphia, Pa.
Shaw Electric Crane Co., Muskegon, Mich.
Shriver, T., & Co., 333 E. 56th St., New York.
Smith, Whitcomb & Cook Co., Barre, Vt.
Speidel, J. G., Reading, Pa.
Walton, P. M., 1023 Germantown Ave., Philadelphia, Pa.
Whitcomb Bros., Barre, Vt.
Whitehead & Kales Iron Works, Randolph & Franklin Sts., Detroit, Mich.
Whiting Foundry Equipment Co., Harvey, Ill.
Wood, R. D., & Co., 400 Chestnut St., Philadelphia, Pa.
Youngstown Engineering Co., Youngstown, O.

40 ELECTRIC. Operated by electricity.

Alliance Machine Co., Alliance, O.
Box, Alfred, Co., Front & Poplar Sts., Philadelphia, Pa.
Brown Hoisting Machinery Co., 1345 St. Clair St., Cleveland.
Browning Engineering Co., Collinwood, O.
Bullock Electric Mfg. Co., Cincinnati, O.
Case Mfg. Co., Columbus, O.
Cleveland Crane & Car Co., Wickliffe, O.
Dallett, Thos. H., & Co., York St. & Sedgley Ave., Philda.
Garry Iron & Steel Co., Coe & Lake Sts., Cleveland, Ohio.
General Electric Co., Schenectady, N. Y.
Industrial Works, Bay City, Mich.
Jacobs, Chas. C., Bridge & Iron Works, Amboy, Ill.
Lincoln Iron Works, Rutland, Vt.
Mansfield Engineering Co., Mansfield, O.
Maris Bros., 56th St. & Gray Ave., Philadelphia, Pa.

CRANES, ELECTRIC, TRAVELING, continued.

Morgan Engineering Co., Alliance, O.
New Albany Mfg. Co.. New Albany, Ind.
New Jersey Foundry & Machine Co., 9 Murray St., New York.
Niles-Bement-Pond Co., 136 Liberty St., New York.
Northern Engineering Works, Detroit, Mich.
North Penn Iron Co., North Penn Junction, Philadelphia, Pa.
Pawling & Harnischfeger, Milwaukee, Wis.
Rogers Iron Co., Springfield, O.
Sellers, Wm., & Co., Inc., 1600 Hamilton St., Philadelphia, Pa.
Shaw Electric Crane Co., Muskegon, Mich.
Shriver, T., & Co., 333 E. 56th St., New York.
Triumph Ice Machine Co., 610 Baymiller St., Cincinnati, O.
Wellman-Seaver-Morgan Co., Cleveland, O.
Whiting Foundry Equipment Co., Harvey, Ill.
Youngstown Engineering Co., Youngstown, O.

41 **Wrecking.** Mounted on a flat car and used on railroads.

American Car & Foundry Co., 706 Chestnut St., St. Louis, Mo.
Brown Hoisting Machinery Co., 1345 St. Clair St., Cleveland.
Bucyrus Co., South Milwaukee, Wis.
Industrial Works, Bay City, Mich.
Marion Steam Shovel Co., Marion, O.
Mt. Vernon Car Mfg. Co., Mt. Vernon, Ill.
Sheffield Car Co., Three Rivers, Mich.
Sellers, Wm., & Co., Inc., 1600 Hamilton St., Philadelphia, Pa.
Vulcan Foundry & Machine Co., New Castle, Pa.

42 **DERRICKS.** For hoisting and usually for swinging great weights.

American Hoist & Derrick Co., St. Paul, Minn.
Bacon, Earle C., 26 Cortlandt St., New York.
Broderick & Bascom Rope Co., 809 N. Main St., St. Louis, Mo.
Browning Engineering Co., Collinwood, O.
Brunner & Lay, 133 W. Polk St., Chicago, Ill.
Byers, John F., Machine Co., Ravenna, O.
Carlin's, Thos., Sons' Co., Allegheny, Pa.
Clark, Alexander, & Co., Quincy, Mass.
Contractors Plant Mfg. Co., 127 Erie St., Buffalo, N. Y.
Cram, D. H., Powers St., Boston, Mass.
Dobbie Foundry & Machine Co., Niagara Falls, N. Y.
Dodge Coal Storage Co., Nicetown, Philadelphia, Pa.
Flory, S., Mfg. Co., Bangor, Pa.
General Electric Co., Schenectady, N. Y.
Harvey, H. H., 606 Atlantic Ave., Boston, Mass.
Hayward Co., 97 Cedar St., New York.
Hinds, Thomas, Malone, N. Y.
Hoisting & Conveying Machinery Co., 44 N. Elizabeth St., Chicago, Ill.
Hoshor-Platt Co., 120 Liberty St., New York.
Jacobs, Chas. C., Bridge & Iron Works, Amboy, Ill.
Lake Shore Engine Works, Marquette, Mich.
Leschen, A., & Sons Rope Co., 920 N. 1st St., St. Louis, Mo.
Lidgerwood Mfg. Co., 96 Liberty St., New York.
Lincoln Iron Works, Rutland, Vt.
Lord, Bowler & Co., 35 Center St., Cleveland, O.
McMyler Mfg. Co., 119 Columbus St., Cleveland, O.
Mine & Smelter Supply Co., Denver, Col.

DERRICKS, continued

Morgan Engineering Co., Alliance, O.
Mundy, J. S., 22 Prospect St., Newark, N. J.
National Hoist & Machine Co., 463 W. 22d St., Chicago, Ill.
New Albany Mfg. Co., New Albany, Ind.
Norman & Evans, Lockport, N. Y.
Patch, F. R., Mfg. Co., Rutland, Vt.
Pollard, Jas. G., 141 Raymond St., Brooklyn, N. Y.
Rawson & Morrison Mfg. Co., Cambridgeport, Mass.
Richmond, A. K., & Son, 511 E. 5th St., Boston, Mass.
St. Cloud Iron Works, St. Cloud, Minn.
Smith, Theodore, & Sons Co., Foot of Essex St., Jersey City, N. J.
Smith, Whitcomb & Cook Co., Barre, Vt.
Speidel, J. G., Reading, Pa.
Union Machine & Boiler Co., 108 River St., Cleveland, O.
Vulcan Iron Works, 59 Milwaukee Ave., Chicago, Ill.
Vulcan Iron Works, Toledo, O.
Vulcan Iron Works, Wilkesbarre, Pa.
Whitcomb Bros., Barre, Vt.
Whiting Foundry Equipment Co., Harvey, Ill.

43 **DRUMS, HOISTING.** Barrels or cylinders upon which cables are wound.

Allis-Chalmers Co., New York Life Bldg., Chicago, Ill.
American Hoist & Derrick Co., St. Paul, Minn.
Bacon, Earle C., 26 Cortlandt St., New York.
Byers, John F., Machine Co., Ravenna, O.
Contractor Plant Mfg. Co., 127 Erie St., Buffalo, N. Y.
Crawford & McCrimmon Co., Brazil, Ind.
Dederick's, P. K., Sons, Albany, N. Y.
Dobbie Foundry & Machine Co., Niagara Falls, N. Y.
Eastern Machinery Co., New Haven, Conn.
Flory, S., Mfg. Co., Bangor, Pa.
Freeman, J. W., Joplin, Mo.
Garry Iron & Steel Co., Coe & Lake Sts., Cleveland, Ohio.
Hoshor-Platt Co., 120 Liberty St., New York.
Lambert Hoisting Engine Co., 115 Poinier St., Newark, N. J.
Lidgerwood Mfg. Co., 96 Liberty St., New York.
Mundy, J. S., 22 Prospect St., Newark, N. J.
Ottumwa Iron Works, Ottumwa, Ia.
Poole Engineering & Machine Co., Baltimore, Md.
Rawson & Morrison Mfg. Co., Cambridgeport, Mass.

44 **ELEVATORS.**

45 **Barrel and Package.** For raising materials in warehouses, mills, etc.

Bartlett, C. O., & Snow Co., French & Winter Sts., Cleveland.
Buhl Malleable Co., Wight & Adair Sts., Detroit, Mich.
Exeter Machine Works, Pittston, Pa.
Interstate Engineering Co., Williamson Bldg., Cleveland, O.
Jeffrey Mfg. Co., Columbus, O.
Mey Chain Belting & Engineering Works, 14 Perry St., Buffalo, N. Y.
Oram, John S., 160 Coe St., Cleveland, O.
Reedy, H. J., Co., Cincinnati, O.

ELEVATORS, BARREL AND PACKAGE, continued.

Steel Cable Engineering Co., 92 State St., Boston, Mass.
Warsaw Elevator Co., Warsaw, N. Y.
Webster Mfg. Co., 1075 W. 15th St., Chicago, Ill.

46 **Bucket.** Of the endless chain variety, the conveying receptacles being buckets.

Bartlett, C. O., & Snow Co., French & Winter Sts., Cleveland.
Gilford Bros., Hudson, N. Y.
Jeffrey Mfg. Co., Columbus, O.
Power & Mining Machinery Co., 52 William St., New York.
Taylor Iron & Steel Co., High Bridge, N. J.

47 **Foundry.**

Haughton Elevator & Machine Co., Toledo, O.
Northern Engineering Works, Detroit, Mich.
Reedy, H. J., Co., Cincinnati, O.
Ridgway, Craig & Son, Coatesville, Pa.
Warsaw Elevator Co., Warsaw, N. Y.
Whiting Foundry Equipment Co., Harvey, Ill.

48 **Freight and Passenger.** For use in residences, public buildings, etc.

Albro-Clem Elevator Co., 7th St. & Glenwood Ave., Philda.
Barth Mfg. Co., Milwaukee, Wis.
Bates, James, Sons, Pratt & President Sts., Baltimore, Md.
Broedesser Elevator Mfg. Co., 512 Commerce St., Milwaukee, Wis.
Cahill & Hall Elevator Co., San Francisco, Cal.
Chickasaw Iron Works, 98 2d St., Memphis, Tenn.
Eaton & Prince Co., Chicago, Ill.
Edmonds, F. A., 144 Champlain St., Cleveland, O.
Faunt, Le Roy, & Co., Baltimore, Md.
Gardner Elevator Co., Detroit, Mich.
Grote Mfg. Co., Evansville, Ind.
Haughton Elevator & Machine Co., Toledo, O.
Hoffman, Chas. W., & Co., 309 W. 36th St., New York.
Holmes & Blanchard Co., 37 Washington St., N., Boston, Mass.
Howard Iron Works, Buffalo, N. Y.
Kieckhefer, A., Elevator Co., 1026 St. Paul Ave., Milwaukee, Wis.
Kimball Bros., Council Bluffs, Ia.
Kinkade & Liggett Co., Columbus, O.
Louisville Elevator Co., Louisville, Ky.
McLauthlin, Geo. T., Co., 120 Fulton St., Boston, Mass.
Maryland Foundry & Machine Co., Baltimore, Md.
Mason, Volney W., & Co., Providence, R. I.
Moline Elevator Co., Moline, Ill.
Moon Elevator Co., 8th & Mulanphy Sts., St. Louis, Mo.
Morse, Williams & Co., Inc., Philadelphia, Pa. *See adv. page 20.*
Murtaugh, James, 202 E. 42d St., New York.
National Elevator & Machine Co., Scranton, Pa.
Otis Elevator Co., Yonkers, N. Y.
Parkhurst Bros., & Co., 218 Kentucky Ave., Indianapolis, Ind.
Plunger Elevator Co., Worcester, Mass.
Portland Co., Inc., Portland, Me.

ELEVATORS, FREIGHT AND PASSENGER, continued

Reedy, D. V., & Co., Indianapolis, Ind.
Reedy Elevator Co., 407 W. 14th St., New York.
Reedy, H. J., Co., Cincinnati, O.
Reedy, J. W., Elevator Mfg. Co., Chicago, Ill.
Rhode Island Elevator & Machine Co., Providence, R. I.
Sedgwick Machine Works, Poughkeepsie, N. Y.
See, A. B., Electric Elevator Co., 220 Broadway, New York.
Springfield Elevator & Pump Co., Springfield, Mass.
Standard Plunger Elevator Co., 1 Broadway, New York.
Stokes & Parish Elevator Co., 30th & Chestnut Sts., Phila.
Storms Mfg. Co., Newark, N. J.
Van Emon Engineering Co., 52 National St., San Francisco, Cal.
Warner Elevator Mfg. Co., Spring Grove Ave., Cincinnati, O.
Warsaw Elevator Co., Warsaw, N. Y.
Whittier Machine Co., South Boston, Mass.

49 **Hod.** For use in buildings under construction.

Adams Bros., & Co., 355 31st St., Chicago, Ill.
Adrian Brick & Tile Machine Co., Adrian, Mich.
American Hoist & Derrick Co., St. Paul, Minn.
Anderson, Chas., 18 Lexington Ave., Brooklyn, N. Y.
Builders' Elevator Co., 22 Clinton St., Chicago, Ill.
Byers, John F., Machine Co., Ravenna, O.
Contractors Plant Mfg. Co., 127 Erie St., Buffalo, N. Y.
Edelmeyer & Morgan Hod Elevator Co., 333 W. 49th St., New York.
Kieckhefer, A., Elevator Co., 1026 St. Paul Ave., Milwaukee, Wis.
Moline Elevator Co., Moline, Ill.
National Hoist & Machine Co., 463 W. 22d St., Chicago, Ill.
Thomas Elevator Co., 138 Washington St., Chicago, Ill.
Thomas & Buckley Hod Elevator Co., 317 W. 64th St., N. Y.

50 **Water.** See 46, Bucket Elevators.

51. **ESCALATORS.** Inclined elevators or moving stairways.

Franklin Machine & Tool Co., Franklin, Pa.
Link-Belt Engineering Co., Nicetown, Philadelphia, Pa.
Otis Elevator Co., Yonkers, N. Y.
Reno Inclined Elevator Co., 551 W. 35th St., New York.

52 **HOISTS, CHAIN.** In which a chain passing through a pulley block is used for hoisting.

Boston & Lockport Block Co., 160 Commercial St., Boston.
Box, Alfred, Co., Front & Poplar Sts., Philadelphia, Pa.
Chicago Pneumatic Tool Co., Fisher Bldg., Chicago, Ill.
Chisholm & Moore Mfg. Co., Lake near Kirtland St., Cleveland, Ohio. *See adv. page 18.*
Contractors Plant Mfg. Co., 127 Erie St., Buffalo, N. Y.
Dake Engine Co., Grand Haven, Mich.
Dobbie Foundry & Machine Co., Niagara Falls, N. Y.
Dunn, Jas. P., 207 Dunham Ave., Cleveland, O.
Empire Engine & Motor Co., Orangeburg, N. Y.
Harrington, Edwin, Son, & Co., Inc., 1503 Pennsylvania Ave., Philadelphia, Pa.
Jeffrey Mfg. Co., Columbus, Ohio.

HOISTS, CHAIN, continued.

Lane Bros., Co., Poughkeepsie, N. Y.
McCoy, Jos. F., Co., 157 Chambers St., New York.
Maris Bros., 56th St. & Gray Ave., Philadelphia, Pa.
Mecklenberg Iron Works, Charlotte, N. C.
Moyer, J. W., & Co., 1736 N. Howard St., Philadelphia, Pa.
Ney Mfg. Co., Canton, O.
Niles-Bement-Pond Co., 136 Liberty St., New York.
Olsen, Tinius, & Co., 500 N. 12th St., Philadelphia, Pa.
Pawling & Harnischfeger, Milwaukee, Wis.
Reading Crane & Hoist Works, Reading, Pa.
Round, D., & Son, 2287 Broadway, Cleveland, O.
Speidel, J. G., Reading, Pa.
Stuebner, Geo. L., Iron Works, 166 Third St., Long Island City, N. Y.
Wagner-Palmros Mfg. Co., Fairmont, W. Va.

53 **Electric.** Operated by electricity.

American Hoist & Derrick Co., St. Paul, Minn.
Box, Alfred, Co., Front & Poplar Sts., Philadelphia, Pa.
Brown Hoisting Machinery Co., 1345 St. Clair St., Cleveland.
Cleveland Crane & Car Co., Wickliffe, O.
Denver Engineering Works Co., Blake & 30th Sts., Denver, Col.
Dobbie Foundry & Machine Co., Niagara Falls, N. Y.
Elektron Mfg. Co., Springfield, Mass.
Flory, S., Mfg. Co., Bangor, Pa.
General Electric Co., Schenectady, N. Y.
Hoshor-Platt Co., 120 Liberty St., New York.
Hunt, C. W., Co., 45 Broadway, New York.
Lambert Hoisting Engine Co., 115 Poinier St., Newark, N. J.
Lidgerwood Mfg. Co., 96 Liberty St., New York.
Litchfield Foundry & Machine Co., Litchfield, Ill.
McMyler Mfg. Co., 119 Columbus St., Cleveland, O.
Maris Bros., 56th St. & Gray Ave., Philadelphia, Pa.
Mine & Smelter Supply Co., Denver, Col.
Northern Engineering Works, Detroit, Mich.
Pawling & Harnischfeger, Milwaukee, Wis.
Phoenix Electrical Mfg. Co., Mansfield, O.
Rawson & Morrison Mfg. Co., Cambridgeport, Mass.
Wellman-Seaver-Morgan Co., Cleveland, O.

54 **Grip.** For hand elevators.

Arthur Co., 188 Front St., New York.

55 **Hand.**

Adrian Brick & Tile Machine Co., Adrian, Mich.
American Hoist & Derrick Co., St. Paul, Minn.
Bethlehem Foundry & Machine Co., South Bethlehem, Pa.
Browning Engineering Co., Collinwood, O.
Carlin's, Thos., Sons Co., Allegheny, Pa.
Case Mfg. Co., Columbus, O.
Chisholm & Moore Mfg. Co., Lake near Kirtland St., Cleveland, Ohio. *See adv. page 18.*
Contractors' Plant Mfg. Co., 127 Erie St., Buffalo, N. Y.
Davis, F. M., Iron Works Co., 8th & Larimer Sts., Denver, Col.
Dederick's, P. K., Sons, Albany, N. Y.

HOISTS, HAND, continued.

Dobbie Foundry & Machine Co., Niagara Falls, N. Y.
Flory, S., Mfg. Co., Bangor, Pa.
Franklin Portable Crane & Hoist Co., Franklin, Pa.
Hassell Iron Works Co., Colorado Springs, Col.
Lambert Hoisting Engine Co., 115 Poinier St., Newark, N. J.
Lord, Bowler & Co., 35 Center St., Cleveland, O.
Maris Bros., 56th St. & Gray Ave., Philadelphia, Pa.
Mason, Volney W., & Co., Providence, R. I.
Mine & Smelter Supply Co., Denver, Col.
Mundy, J. S., 22 Prospect St., Newark, N. J.
Ney Mfg. Co., Canton, O.
Sedgwick Machine Works, Poughkeepsie, N. Y.
Speidel, J. G., Reading, Pa.
Warsaw Elevator Co., Warsaw, N. Y.
Yale & Towne Mfg. Co., 9 Murray St., New York.

56 **Hydraulic.** Operated by hydraulic pressure.

Olsen, Tinius, 500 12th St., Philadelphia, Pa.
Pennsylvania Iron Works Co., 50th & Lancaster Ave., Philda.
Sellers, Wm., & Co., Inc., 1600 Hamilton St., Philadelphia, Pa.

57 **Pneumatic.** Operated by compressed air

American Air Compressor Works, 26 Cortlandt St., New York.
Baird Machinery Co., Pittsburg, Pa.
Browning Engineering Co., Collinwood, O.
Chicago Pneumatic Tool Co., Fisher Bldg., Chicago, Ill.
Chisholm & Moore Mfg. Co., Lake near Kirtland St., Cleveland, Ohio. *See adv. page 18.*
Curtis & Co. Mfg. Co., 2201 Washington Ave., St. Louis, Mo.
Dake Engine Co., Grand Rapids, Mich.
Dodge Mfg. Co., Mishawaka, Ind.
Empire Engine & Motor Co., Orangeburg, N. Y.
Gardner Governor Co., Quincy, Ill.
Garry Iron & Steel Co., Coe & Lake Sts., Cleveland, Ohio.
General Pneumatic Tool Co., Montour Falls, N. Y.
Hanna Engineering Works, 820 Elston Ave., Chicago, Ill.
Knell Air Brake Co., Battle Creek, Mich.
Nason Mfg. Co., 71 Beekman St., New York.
Niles-Bement-Pond Co., 136 Liberty St., New York.
Northern Engineering Works, Detroit, Mich.
Pedrick & Ayer Co., Plainfield, N. J.
Philadelphia Pneumatic Tool Co., 21st St. & Allegheny Ave., Philadelphia, Pa.
Pilling Air Engine Works, Bucyrus, O.
Pneumatic Engineering Co., 128 Broadway, New York.
Port Huron Air Tool Co., Port Huron, Mich.
Railway Appliances Co., Old Colony Bldg., Chicago, Ill.
Rand Drill Co., 128 Broadway, New York. *See adv. page 21.*
Ridgway, Craig, & Son Co., Coatesville, Pa.
Rix Compressed Air & Drill Co., 396 Mission St., San Francisco, Cal.
Standard Railway Equipment Co., Union Trust Bldg., St. Louis, Mo.
Whiting Foundry Equipment Co., Harvey, Ill.
Wickes Bros., Saginaw, Mich.

HOISTS, continued

58 Trolley.

Chisholm & Moore Mfg. Co., Lake near Kirtland St., Cleveland, Ohio. *See adv. page 18.*
Dobbie Foundry & Machine Co., Niagara Falls, N. Y.
Garry Iron & Steel Co., Coe & Lake Sts., Cleveland, Ohio.
Maris Bros., 56th St. & Gray Ave., Philadelphia, Pa.
New Jersey Foundry & Machine Co., 9 Murray St., New York.
Northern Engineering Works, Detroit, Mich.
Speidel, J. G., Reading, Pa.

59 JACKS.

60 Hydraulic. For lifting heavy weights or exerting great force by fluid pressure from a hand pump connected with a large bore cylinder and a piston.

Anderson, W. H., & Sons, Inc., 44 Macomb St., Detroit, Mich.
Burroughs, Chas., Co., 141 Commerce St., Newark, N. J.
City Machine Co., Cleveland, O.
Dienelt & Eisenhardt, 1308 Howard St., Philadelphia, Pa.
Dudgeon, Richard, 24 Columbia St., New York.
Fairbanks, Morse & Co., 172 Franklin St., Chicago, Ill.
Henderer's, A. L., Sons, Wilmington, Del.
Joyce-Cridland Co., Wyandot & Railroad Sts., Dayton, O.
Justice, Philip S., & Co., 14 N. 5th St., Philadelphia, Pa.
Kalamazoo Railway Supply Co., Kalamazoo, Mich.
McCoy, Jos. F., Co., 157 Chambers St., New York.
Watson-Stillman Co., 46 Dey St., New York.

61 Lifting. Operated by a lever or a screw.

Anderson, W. H., & Sons, Inc., 44 Macomb St., Detroit, Mich.
Barth Mfg. Co., Milwaukee, Wis.
Boyer & Radford, Dayton, O.
Bray Mfg. Co., Newark, N. J.
Contractors' Plant Mfg. Co., 127 Erie St., Buffalo, N. Y.
Duff Mfg. Co., 405 Marion Ave., Allegheny, Pa.
Hagerstown Foundry Co., Hagerstown, Md.
Harvey, H. H., 606 Atlantic Ave., Boston, Mass.
Henderer's, A. L., Sons, Wilmington, Del.
Howell, R. R., & Co., Minneapolis, Minn.
Joyce-Cridland Co., Wyandot & Railroad Sts., Dayton, O.
Kalamazoo Railway Supply Co., Kalamazoo, Mich.
Klemm, E. R., 103 W. Monroe St., Chicago, Ill.
McCoy, Jos. F., Co., 157 Chambers St., New York.
Maynard, C. T., & Co., Fairhaven, Vt.
Newell, J. F., & Co., Gardiner, Me.
New London Vise Works, 20 Division St., New London, Conn.
Norton, A. O., 236 Congress St., Boston, Mass.
Pelky, W. H., Fair Haven, Vt.
Schwartz, M., & Son, Chillicothe, O.
Sheffer, B. F., Glen Rock, Pa.
Standard Machine Works, Newark, N. J.

62 Pneumatic. Operated by compressed air.

Chicago Pneumatic Tool Co., Fisher Bldg., Chicago, Ill.
Garry Iron & Steel Co., Coe & Lake Sts., Cleveland, Ohio. *See adv. page 23.*

JACKS, continued.

63 **Pumping.** For raising liquids.

Lazier Gas Engine Co., Buffalo, N. Y.
Myers, F. E., & Bro., Ashland, O.

64 **Ratchet.** Lifting jacks in which the screw is rotated by a lever and ratchet mechanism.

Belleville Pump & Skein Works, Belleville, Ill.
Boyer & Radford, Dayton, O.
Illinois Iron & Bolt Co., Carpentersville, Ill.
Joyce-Cridland Co., Wyandot & Railroad Sts., Dayton, O.
Justice, Philip S., & Co., 14 N. 5th St., Philadelphia, Pa.
Norton, A. O., 236 Congress St., Boston, Mass.

65 **Screw.** Hoisting or lifting jacks operated by a screw.

Baker Mfg. Co., Evansville, Wis.
Barber Mfg. Co., Ashtabula, O.
Barth Mfg. Co., Milwaukee, Wis.
Belleville Pump & Skein Works, Belleville, Ill.
Boyer & Radford, Dayton, O.
Brown Bros. Mfg. Co., W. Jackson Blvd. & Clinton St., Chicago, Ill.
Chapman Jack Co., Cleveland, O.
Contractors' Plant Mfg. Co., 127 Erie St., Buffalo, N. Y.
Dudgeon, Richard, 24 Columbia St., New York.
Duff Mfg. Co., 405 Marion Ave., Allegheny, Pa.
Goulds Mfg. Co., Seneca Falls, N. Y.
Harvey, H. H., 606 Atlantic Ave., Boston, Mass.
Howell, R. R., & Co., Minneapolis, Minn.
Illinois Iron & Bolt Co., Carpentersville, Ill.
Joyce-Cridland Co., Wyandot & Railroad Sts., Dayton, O.
Justice, Philip S., & Co., 14 N. 5th St., Philadelphia, Pa.
Kalamazoo Railway Supply Co., Kalamazoo, Mich.
Kinsley Iron & Machine Co., Canton, Mass.
Le Count, Wm. G., South Norwalk, Conn.
Lovejoy, T. H., 90 Ohio St., Chicago, Ill.
McCoy, Jos. F., Co., 157 Chambers St., New York.
McLagon Foundry Co., New Haven, Conn.
Millers Falls Co., Millers Falls, Mass.
Munnsville Plow Co., Munnsville, N. Y.
Newell, J. F., & Co., Gardiner, Me.
New London Vise Works, 20 Division St., New London, Conn.
Niles-Bement-Pond Co., 136 Liberty St., New York.
Norton, A. O., 236 Congress St., Boston, Mass.
Peck, Stow & Wilcox Co., Southington, Conn.
Pedrick & Ayer Co., Plainfield, N. J.
Racine Steel & Iron Mfg. Co., Racine, Wis.
Riehle Bros., Testing Machine Co., 1424 N. 9th St., Philda.
Rumsey & Co., Ltd., Seneca Falls, N. Y.
Stilwell-Bierce & Smith-Vaile Co., Dayton, O.
Swett, A. L., Iron Works, Medina, N. Y.
Taylor & Co., 415 Driggs Ave., Brooklyn, N. Y.
Watson-Stillman Co., 46 Dey St., New York.

66 **Track.** For use on railroads.

Barth Mfg. Co., Milwaukee, Wis.
Belleville Pump & Skein Works, Belleville, Ill.

JACKS, TRACK, continued.

Boyer & Radford, Dayton, O.
Crane, A. M., & Co., The Rookery, Chicago, Ill.
Duff Mfg. Co., 405 Marion Ave., Allegheny, Pa.
Elkhart Frog & Crossing Works, Elkhart, Ind.
Fairbanks, Morse & Co., 172 Franklin St., Chicago, Ill.
Henderer's, A. L., Sons, Wilmington, Del.
Illinois Iron & Bolt Co., Carpentersville, Ill.
Joyce-Cridland Co., Wyandot & Railroad Sts., Dayton. O.
Justice, Philip S., & Co., 14 N. 5th St., Philadelphia, Pa.
Kalamazoo Railway Supply Co., Kalamazoo, Mich.
Morden Frog & Crossing Works, The Rookery, Chicago, Ill.
Norton, A. O., 236 Congress St., Boston, Mass.
Pettibone, Mulliken & Co., Inc., 204 Dearborn St., Chicago, Ill.
Pittsburg Tool & Drop Forge Co., Arrott Bldg., Pittsburg, Pa.
Templeton, Kenly & Co., Ltd., The Rookery, Chicago, Ill.
Verona Tool Works, Murtland Bldg., Pittsburg, Pa.

67 Wagon.

Barber Mfg. Co., Ashtabula, O.
Barth Mfg. Co., Milwaukee, Wis.
Boston & Lockport Block Co., 160 Commercial St., Boston.
Buckeye Mfg. Co., Anderson, Ind.
Covert Mfg. Co., Watervliet, N. Y.
Eureka Mower Co., Utica, N. Y.
Lane Bros., Co., Poughkeepsie, N. Y.

68 SHACKLE HOOKS. For joining chains.
Keystone Drop Forge Works, Chester, Pa.

69 TROLLEYS AND TRAMWAYS.

Atlas Bolt & Screw Co., Cleveland, O.
Bacon, Earle O., 26 Cortlandt St., New York.
Bethlehem Foundry & Machine Co., South Bethlehem, Pa.
Brown Hoisting Machinery Co., 1345 St. Clair St., Cleveland.
Carlin's, Thos., Sons. Co., Allegheny, Pa.
Case Mfg. Co., Columbus, O.
Chicago Pneumatic Tool Co., Fisher Bldg., Chicago, Ill.
Chisholm & Moore Mfg. Co., Lake near Kirtland St., Cleveland, Ohio. *See adv. page 18.*
Coburn Trolley Track Mfg. Co., Holyoke, Mass.
Dodge Coal Storage Co., Nicetown, Philadelphia, Pa.
Cohoes Iron Foundry & Machine Co., Cohoes, N. Y.
Dobbie Foundry & Machine Co., Niagara Falls, N. Y.
Garry Iron & Steel Co., Coe & Lake Sts., Cleveland, Ohio.
General Electric Co., Schenectady, N. Y.
Hoshor-Platt Co., 120 Liberty St., New York.
Hallidie-Painter Tramway Co., Fremont & Mission Sts., San Francisco, Cal.
Harrington, Edwin, Son, & Co., Inc., 1503 Pennsylvania Ave., Philadelphia, Pa.
Hersey Mfg. Co., South Boston, Mass.
Leschen, A., & Sons Rope Co., 920 N. 1st St., St. Louis, Mo.
McCabe Hanger Mfg. Co., 425 W. 25th St., New York.
Macomber & Whyte Rope Co., 19-21 S. Canal St., Chicago, Ill.
Maris Bros., 56th St. & Gray Ave., Philadelphia, Pa.
Moyer, J. W., & Co., 1736 N. Howard St., Philadelphia, Pa.

ROLLEYS AND TRAMWAYS, continued

Mundy, J. S., 22 Prospect St., Newark, N. J.
North Alabama Engineering Co., New Decatur, Ala.
New Jersey Foundry & Machine Co., 9 Murray St., New York.
Reading Crane & Hoist Works, Reading, Pa.
Speidel, J. G., Reading, Pa.
Stuebner, G. L., Iron Works, 166 Third St., Long Island City, N. Y.
Turl's, John, Sons, 534 W. 28th St., New York.
Whitehead & Kales Iron Works, Randolph & Franklin Sts., Detroit, Mich.
Whiting Foundry Equipment Co., Harvey, Ill.
Wilcox Mfg. Co., Aurora, Ill.
Yale & Towne Mfg. Co., 9 Murray St., New York.

70 TRUCKS.

71 Baggage. For handling baggage at railway stations.

Ames Plow Co., Quincy Hall, Boston, Mass.
Boston & Lockport Block Co., 160 Commercial St., Boston.
Buffalo Scale Co., Buffalo, N. Y.
Clark, George P., Co., Windsor Locks, Conn.
Fairbanks Co., Broome & Elm Sts., New York.
Farquhar, A. B., Co., Ltd., York, Pa.
Howe Scale Co., Rutland, Vt.
Kalamazoo Railway Supply Co., Kalamazoo, Mich.
Lansing Wheelbarrow Co., Lansing, Mich.
Nutting Truck Co., Faribault, Minn.
Phillips, Doup & Co., 56 Pearl St., Brooklyn, N. Y.
Warsaw Elevator Co., Warsaw, N. Y.
Whitman Agricultural Co., 6900 S. Broadway, St. Louis, Mo.

72 Brick. For use in clay working plants.

American Clay Working Machinery Co., Bucyrus, O.
Atlas Bolt & Screw Co., Cleveland, O.
Bayley, Wm., & Sons Co., 732 Greenbush St., Milwaukee, Wis.
Davis-Price Foundry & Machine Co., New Cumberland, W. Va.
Eastern Machinery Co., New Haven, Conn.
Fernholtz Brick Machinery Co., Boyle & Old Manchester Aves., St. Louis, Mo.
Martin, Henry, Brick Machinery Mfg. Co., Lancaster, Pa.
Michigan Brick & Tile Machine Co., Morenci, Mich.
Potts, C., & A., Co., Indianapolis, Ind.
Raymond, C. W., Co., Dayton, O.
Scott's Patent Brick Car Co., Knoxville, Tenn.
Standard Dry Kiln Co., Indianapolis, Ind.
Steele, J. C., & Son, Statesville, N. C.
Turner, Vaughn & Taylor Co., Cuyahoga Falls, O. *See adv.* page *52*.
Wellington Machine Co., Wellington, O.
Whitman Agricultural Co., 6900 S. Broadway, St. Louis, Mo.

73 Foundry.

Boston & Lockport Block Co., 160 Commercial St., Boston.
Jones & Laughlin Steel Co., Pittsburg, Pa.
Kilbourne & Jacobs Mfg. Co., Columbus, O.
Lansing Wheelbarrow Co., Lansing, Mich.
Northern Engineering Works, Detroit, Mich.

TRUCKS, FOUNDRY, continued

Paxson, J. W., Co., 1021 N. Delaware Ave., Philadelphia, Pa.
Warsaw Elevator Co., Warsaw, N. Y.
Weimer Machine Works Co., Lebanon, Pa.
Whiting Foundry Equipment Co., Harvey, Ill.

74 Logging and Lumber.

Atlas Bolt & Screw Co., Cleveland, O.
Bain Wagon Co., Kenosha, Wis.
Bayley, Wm., & Sons Co., 732 Greenbush St., Milwaukee, Wis.
Boston & Lockport Block Co., 160 Commercial St., Boston.
Butterworth & Lowe, Grand Rapids, Mich.
Chickasaw Iron Works, 98 2d St., Memphis, Tenn.
Comstock, Geo. S., Mechanicsburg, Pa.
Curtis & Co., Mfg. Co., 2201 Washington Ave., St. Louis, Mo.
De Loach Mill Mfg. Co., Atlanta, Ga.
Farmers' Handy Wagon Co., Saginaw, Mich.
Fish Bros. Wagon Co., Racine, Wis.
Georgia Car & Mfg. Co., Savannah, Ga.
Giddings & Lewis Mfg. Co., Fond du Lac, Wis.
Kingsland Mfg. Co., 1521 N. 11th St., St. Louis, Mo.
Knight Mfg. Co., Canton, O.
Kramer Wagon Co., Oil City, Pa.
Lane Mfg. Co., Montpelier, Vt.
Lima Locomotive & Machine Co., Lima, O.
Link, E. M., Machinery Co., Erie, Pa.
Luedinghaus-Espenschied Wagon Co., 1713 N. Broadway, St. Louis, Mo.
Marshall Car Wheel & Foundry Co., Marshall, Tex.
Mecklenburg Iron Works, Charlotte, N. C.
Michigan Wheelbarrow & Truck Co., Saginaw, Mich.
Mt. Vernon Car Mfg. Co., Mt. Vernon, Ill.
North Alabama Engineering Co., New Decatur, Ala.
Peacock's Iron Works, Selma, Ala.
Richmond Machine Works, Richmond, Ind.
Robinson & Co., Richmond, Ind.
Russel Wheel & Foundry Co., Detroit, Mich.
Sheffield Car Co., Three Rivers, Mich.
Smith, Myers & Schnier Co., 621 W. Front St., Cincinnati, O.
Southern Engine & Boiler Works, Inc., Jackson, Tenn.
Standard Saw Mill Machinery Co., Erie, Pa.
Towsley, John T., Mfg. Co., Evans & Gest Sts., Cincinnati, O.
Union Iron Works, Inc., Minneapolis, Minn.
Union Iron Works Co., Selma, Ala.

75 Store, Warehouse and Factory.

Armstrong, George F., 411 Cherry St., Philadelphia, Pa.
Atlas Bolt & Screw Co., Cleveland, O.
Belcher & Taylor Agl. Tool Co., Chicopee Falls, Mass.
Bogert & Carlough Co., Paterson, N. J.
Boston & Lockport Block Co., 160 Commercial St., Boston.
Buffalo Scale Co., Buffalo, N. Y.
Clark, George P., Co., Windsor Locks, Conn.
Day, J. H., & Co., Cincinnati, O.
Defiance Box Co., Defiance, O.
Dietz, Fred., Co., 1102 Madison Ave., Indianapolis, Ind.
Fairbanks Co., Broome & Elm Sts., New York.

TRUCKS, WAREHOUSE, continued

Fairbanks, Morse & Co., 172 Franklin St., Chicago, Ill.
Farquhar, A. B., Co., Ltd., York, Pa.
Grand Rapids Hand Screw Co., Grand Rapids, Mich.
Howe Scale Co., Rutland, Vt.
Kilbourne & Jacobs Mfg. Co., Columbus, O.
Lansing Wheelbarrow Co., Lansing, Mich.
Leatheroid Mfg. Co., Kennebunk, Me.
McKinney Mfg. Co., Allegheny, Pa.
Messinger Mfg. Co., Tatamy, Pa.
Michigan Mfg. & Lumber Co., Holly, Mich.
Michigan Wheelbarrow & Truck Co., Saginaw, Mich.
Murray, D. J., Mfg. Co., Wausau, Wis.
Nutting Truck Co., Faribault, Minn.
Puffer-Hubbard Mfg. Co., Minneapolis, Minn.
Schriver, O. P., & Co., 208 Elm St., Cincinnati, O.
Sidney Steel Scraper Co., Sidney, O.
Slingsby, H. E., 156 West St., New York.
Smith, I. L., Evansville, Ind.
Spicer Mfg. Co., New Philadelphia, O.
Syracuse Chilled Plow Co., Syracuse, N. Y.
Towsley, John T., Mfg. Co., Evans & Gest Sts., Cincinnati, O.
Tucker & Dorsey Mfg. Co., Indianapolis, Ind.
Warsaw Elevator Co., Warsaw, N. Y.
Westbrook, J. B., Foundry & Machine Co., Danville, Va.
Whitehurst, R. W., Co., Norfolk, Va.
Whitman Agricultural Co., 6900 S. Broadway, St. Louis, Mo.
Zering, H., Mfg. Co., 218 Charles St., Cincinnati, O.

76 **Wire Mill.** For conveying rods after they have been treated in the cleaning room, etc.

Atlas Bolt & Screw Co., Cleveland, O.
Bates Machine Co., Joliet, Ill.
Fairbanks Co., Broome & Elm Sts., New York.
Morgan Construction Co., Worcester, Mass.
Turner, Vaughn & Taylor Co., Cuyahoga Falls, Ohio.

77 **WINCHES AND WINDLASSES.** Horizontal drums for winding or for hoisting by winding.

Acme Road Machinery Co., Frankfort, N. Y.
Allis-Chalmers Co., New York Life Bldg., Chicago, Ill.
American Hoist & Derrick Co., St. Paul, Minn.
American Ship Windlass Co., Providence, R. I.
Bethlehem Foundry & Machine Co., South Bethlehem, Pa.
Brown Hoisting Machinery Co., 1345 St. Clair St., Cleveland.
Carlin's, Thos., Sons, Co., Allegheny, Pa.
Chase Machine Co., 111 Elm St., Cleveland, O.
Contractors' Plant Mfg. Co., 127 Erie St., Buffalo, N. Y.
Dake Engine Co., Grand Haven, Mich.
Dobbie Foundry & Machine Co., Niagara Falls, N. Y.
Dodge Coal Storage Co., Nicetown, Philadelphia, Pa.
Eastern Machinery Co., New Haven, Conn.
Empire Engine & Motor Co., Orangeburg, N. Y.
Freeman, J. W., Joplin, Mo.
Garry Iron & Steel Co., Coe & Lake Sts., Cleveland, Ohio. *See adv. page 23.*
General Electric Co., Schenectady, N. Y.

WINCHES AND WINDLASSES, continued

Harrington, Edwin, Son, & Co., Inc., 1503 Pennsylvania Ave., Philadelphia, Pa.
Harvey, H. H., 606 Atlantic Ave., Boston, Mass.
Hendrie & Bolthoff Mfg. & Supply Co., Denver, Col.
Hyde Windlass Co., Bath, Me.
Klemm, E. R., 103 W. Monroe St., Chicago, Ill.
Lidgerwood Mfg. Co., 96 Liberty St., New York.
Marine Mfg. & Supply Co., 158 South St., New York.
Round, D., & Son, 2287 Broadway, Cleveland, O.
Russell, Albert, & Sons, Co., Newburyport, Mass.
Scaife Foundry & Machine Co., 28th & Smallman Sts., Pittsburg, Pa.
Yale & Towne Mfg. Co., 9 Murray St., New York.

78 WIRE ROPE. For use in cableways, etc.

American Steel & Wire Co., The Rookery, Chicago, Ill.
Broderick & Bascom Rope Co., 809 N. Main St., St. Louis, Mo.
Durable Wire Rope Co., 28 Atlantic Ave., Boston, Mass.
Hallidie-Painter Tramway Co., Fremont & Mission Sts., San Francisco, Cal.
Hammond Mfg. Co., Portland, Ore.
Hazard Mfg. Co., Wilkesbarre, Pa.
Leschen, A., & Sons Rope Co., 920 N. 1st St., St. Louis, Mo.
Lidgerwood Mfg. Co., 96 Liberty St., New York.
Macomber & Whyte Rope Co., 19-21 S. Canal St., Chicago, Ill.
Milholland, J. & B., Co., 718 5th Ave., Pittsburg, Pa.
Mine & Smelter Supply Co., Denver, Col.
National Steel & Wire Co., New Haven, Conn.
Roebling's, John A., Sons Co., Trenton, N. J.
Trenton Iron Co., Trenton, N. J.
Waterbury & Co., Inc., 69 South St., New York.
Williamsport Wire Rope Co., Williamsport, Pa.
Wright Wire Co., Worcester, Mass.

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79 INDUSTRIAL RAILWAYS.

80 CARS.

81 Billet. For carrying billets and blooms in rolling mills.

American Car & Foundry Co., 706 Chestnut St., St. Louis, Mo.
Atlas Bolt & Screw Co., Cleveland, O.
Byram & Co., Inc., 435 Guoin St., Detroit, Mich.
Carlin, W. J., Co., 25th St. & A. V. Ry., Pittsburg, Pa.
Cleveland Crane & Car Co., Wickliffe, O.
Hunt, C. W., Co., 45 Broadway, New York.
Jackson Mfg. Co., Harrisburg, Pa.
Northern Engineering Works, Detroit, Mich.
Sheffield Car Co., Three Rivers, Mich.
Whiting Foundry Equipment Co., Harvey, Ill.

\RS, INDUSTRIAL RAILWAY, continued.

82 **Brick and Clay.**

American Car & Foundry Co., 706 Chestnut St., St. Louis, Mo.
American Clay Working Machinery Co., Bucyrus, O.
Atlas Bolt & Screw Co., Cleveland, O.
Bonnot Co., Canton, O.
Cleveland Crane & Car Co., Wickliffe, O.
Eastern Machinery Co., New Haven, Conn.
Erie Car Works, Erie, Pa.
Freese, E. M., & Co., Galion, O.
Georgia Car & Mfg. Co., Savannah, Ga.
Hathorn Foundry & Machine Co., Mason City, Ia.
Horton Mfg. Co., Painesville, O.
Hoshor-Platt Co., 120 Liberty St., New York.
Kilbourne & Jacobs Mfg. Co., Columbus, O.
Lehigh Car Wheel & Axle Works, Catasauqua, Pa.
Mt. Vernon Car Mfg. Co., Mt. Vernon, Ill.
Ohio Ceramic Engineering Co., 50 Fall St., Cleveland, O.
Peacock's Iron Works, Selma, Ala.
Phillips, Doup & Co., 56 Pearl St., Brooklyn, N. Y.
Raymond, C. W., & Co., Dayton, O.
Scott's Patent Brick Car Co., Knoxville, Tenn.
Sheffield Car Co., Three Rivers, Mich.
Standard Dry Kiln Co., Indianapolis, Ind.
Steele, J. C., & Son, Statesville, N. C.
Stevenson Co., Wellsville, O.
Treadwell, M. H., & Co., 95 Liberty St., New York.
Wellington Machine Co., Wellington, O.

83 **Charging.** For conveying coal, ore, etc., to furnaces.

Atlas Bolt & Screw Co., Cleveland, O.
Hunt, C. W., Co., 45 Broadway, New York.
Power & Mining Machinery Co., 52 William St., New York.
Treadwell, M. H., & Co., 95 Liberty St., New York.

84 **Core Oven.** For holding cores while being baked in the ovens.

Atlas Bolt & Screw Co., Cleveland, O.
Byram & Co., Inc., 435 Guoin St., Detroit, Mich.
Cleveland Crane & Car Co., Wickliffe, O.
Hunt, C. W., Co., 45 Broadway, New York.
Jackson Mfg. Co., Harrisburg, Pa.
Kilbourne & Jacobs Mfg. Co., Columbus, O.
Niles Boiler Co., Niles, O.
Northern Engineering Works, Detroit, Mich.
Sheffield Car Co., Three Rivers, Mich.
Whiting Foundry Equipment Co., Harvey, Ill.

85 **Drier.** For use in lumber and brick kilns.

Atlas Bolt & Screw Co., Cleveland, O.
Bonnot Co., Canton, O.
Hoshor-Platt Co., 120 Liberty St., New York.
Martin, Henry, Brick Machine Mfg. Co., Lancaster, Pa.
Means Foundry & Machine Co., Steubenville, O.
National Blower Works, Milwaukee, Wis.
North Alabama Engineering Co., New Decatur, Ala.
Ohio Ceramic Engineering Co., 50 Fall St., Cleveland, O.

CARS, INDUSTRIAL RAILWAY, continued.

86 **Foundry.** For carrying ladles, etc.

Atlas Bolt & Screw Co., Cleveland, O.
Byram & Co., Inc., 435 Guoin St., Detroit, Mich.
Carlin, W. J., Co., 25th St. & A. V. Ry., Pittsburg, Pa.
Hoshor-Platt Co., 120 Liberty St., New York.
Hunt, C. W., Co., 45 Broadway, New York.
Jackson Mfg. Co., Harrisburg, Pa.
Pollock, Wm. B., Co., Youngstown, O.
Russel Wheel & Foundry Co., Detroit, Mich.
Sheffield Car Co., Three Rivers, Mich.
Treadwell, M. H., & Co., 95 Liberty St., New York.
Weimer Machine Works Co., Lebanon, Pa.
Whiting Foundry Equipment Co., Harvey, Ill.

87 **Mine.**

Aetna Foundry & Machine Co., Springfield, Ill.
Allis-Chalmers Co., New York Life Bldg., Chicago, Ill.
American Car & Foundry Co., 706 Chestnut St., St. Louis, Mo.
American Engineering Specialty Co., 204 Dearborn St., Chicago, Ill.
Archer Iron Works, 34th Pl. & S. Western Ave. Blvd., Chicago, Ill.
Atlas Bolt & Screw Co., Cleveland, O.
Austin Mfg. Co., Manhattan Bldg., Chicago, Ill.
Bacon, Earle C., 26 Cortlandt St., New York.
Bartlett, A. F., & Co., Inc., Saginaw, Mich.
Belleville Pump & Skein Works, Belleville, Ill.
Billmeyer & Small Co., York, Pa.
Bloomsburg Car Mfg. Co., Bloomsburg, Pa.
Buda Foundry & Mfg. Co., Monadnock Blk., Chicago, Ill.
Caldwell Car & Mfg. Co., Caldwell, O.
Carlin, W. J., Co., 25th St. & A. V. Ry., Pittsburg, Pa.
Catawissa Car & Foundry Co., Catawissa, Pa.
Chattanooga Car & Foundry Co., Chattanooga, Tenn.
Cleveland Crane & Car Co., Wickliffe, O.
Colorado Iron Works Co., Denver, Col.
Connellsville Machine & Car Co., Connellsville, Pa.
Danville Foundry & Machine Co., Danville, Ill.
Davis, F. M., Iron Works Co., 8th & Larimer Sts., Denver, Col.
Denver Engineering Works, Blake & 30th Sts., Denver, Col.
Eagle Iron Works Co., Terre Haute, Ind.
Ellison, Wm., & Sons Mfg. Co., 1018 N. 6th St., St. Louis, Mo.
Exeter Machine Works, Pittston, Pa.
Fairbanks, Morse & Co., 172 Franklin St., Chicago, Ill.
Globe Iron Works, Inc., Stockton, Cal.
Harman & Hassert, Bloomsburg, Pa.
Haskell & Barker Car Co., Michigan City, Ind.
Heimann, A., & Bro., Massillon, O.
Helmick Foundry & Machine Co., Fairmont, W. Va.
Hempfield Foundry Co., Ltd., Greensburg, Pa.
Hendrie & Bolthoff Mfg. & Supply Co., Denver, Col.
Herzler-Henninger Machine Works, Belleville, Ill.
Interstate Engineering Co., Williamson Bldg., Cleveland, O.
Jackson Mfg. Co., Harrisburg, Pa.
Jeffrey Mfg. Co., Columbus, Ohio.

CARS, MINE, continued

Kalamazoo Railway Supply Co., Kalamazoo, Mich.
Kenney & Co., Scottdale, Pa.
Kilbourne & Jacobs Mfg. Co., Columbus, O.
Lansing Wheelbarrow Co., Lansing, Mich.
Lehigh Car Wheel & Axle Works, Catasauqua, Pa.
Lima Locomotive & Machine Co., Lima, O.
Litchfield Foundry & Machine Co., Litchfield, Ill.
Marine Iron Co., Bay City, Mich.
Monongahela Mfg. Co., Monongahela, Pa.
Nelsonville Foundry & Machine Co., Nelsonville, O.
New Jersey Foundry & Machine Co., 9 Murray St., New York.
Ottumwa Iron Works, Ottumwa, Ia.
Peacock's Iron Works, Selma, Ala.
Phillips' Mine & Mill Supply Co., Pittsburg, Pa.
Pie, Justin J. (Estate of), Osceola Mills, Pa.
Power & Mining Machinery Co., 52 William St., New York.
Prox & Brinkman Mfg. Co., Terre Haute, Ind.
Ramapo Iron Works, Hillburn, N. Y.
Risdon Iron & Locomotive Works, San Francisco, Cal.
Salmon Iron Co., Freeland, Pa.
Scaife, Wm. B., & Sons, Co., 221 1st Ave., Pittsburg, Pa.
Sheffield Car Co., Three Rivers, Mich.
Spicer Mfg. Co., New Philadelphia, O.
Star Mfg. Co., New Lexington, O.
Stine, S. B., & Son, Osceola Mills, Pa.
Stuebner, G. L., Iron Works, 166 3d St., Long Island City, N. Y.
Sullivan Machinery Co., 135 Adams St., Chicago, Ill.
Tamaqua Mfg. Co., Tamaqua, Pa.
Treadwell, M. H., & Co., 95 Liberty St., New York.
Truax Mfg. Co., Denver, Col.
Wagner-Palmros Mfg. Co., Fairmont, W. Va.
Watt Mining Car Wheel Co., Barnesville, O.
Weber Gas & Gasoline Engine Co., Kansas City, Mo.
Wellman-Seaver-Morgan Co., Cleveland, O.

88 Ore. See 87, Mine Cars.

89 TRACKS, PORTABLE.

Atlas Bolt & Screw Co., Cleveland, O.
Bacon, Earle C., 26 Cortlandt St., New York.
Dodge Mfg. Co., Mishawaka, Ind.
Hoisting & Conveying Machinery Co., 44 N. Elizabeth St., Chicago, Ill.
Hoshor-Platt Co., 120 Liberty St., New York.
Hunt, C. W., Co., 45 Broadway, New York.
Mead, John A., & Co., 11 Broadway, New York.
Peteler Portable Railway Mfg. Co., Minneapolis, Minn.
Russel Wheel & Foundry Co., Detroit, Mich.
Steel Cable Engineering Co., 92 State St., Boston, Mass.
Treadwell, M. H., & Co., 95 Liberty St., New York.
Wharton, Wm., Jr., & Co., 25th St. & Washington Ave., Philda.
Whiting Foundry Equipment Co., Harvey, Ill.

90. MINING MACHINERY.

91 **AIR COMPRESSORS.** See Finding List.

92 **AMALGAMATING PANS AND BARRELS.** For use in extracting metals from ore.

Allis-Chalmers Co., New York Life Bldg., Chicago, Ill.
Colorado Iron Works Co., Denver, Col.
Fulton Iron Works, San Francisco, Cal.
Hammond Mfg. Co., Portland, Ore.
Hendy, Joshua, Machine Works, San Francisco, Cal.
Krogh Mfg. Co., 9 Stevenson St., San Francisco, Cal.
Marshutz & Cantrell, Main & Howard Sts., San Francisco, Cal.
Union Iron Works, San Francisco, Cal.

93 **BLASTING MACHINES.** See Finding List.

94 **BLOWERS.** See Finding List.

95 **BREAKERS.** See Finding List.

96 **BUCKETS.** See Finding List.

97 **CAGES, MINING.**

Allis-Chalmers Co., New York Life Bldg., Chicago, Ill.
Bartlett, A. F., & Co., Inc., Saginaw, Mich.
Colorado Iron Works Co., Denver, Col.
Connellsville Machine & Car Co., Connellsville, Pa.
Davis, F. M., Iron Works Co., 8th & Larimer Sts., Denver, Col.
Denver Engineering Works Co., Blake & 30th Sts., Denver, Col.
Eagle Iron Works Co., Terre Haute, Ind.
Ellison, Wm., & Sons Mfg. Co., 1018 N. 6th St., St. Louis, Mo.
Hendrie & Bolthoff Mfg. & Supply Co., Denver, Col.
Jeffrey Mfg. Co., Columbus, Ohio.
Kenney & Co., Scottdale, Pa.
Litchfield Foundry & Machine Co., Litchfield, Ill.
Lucas, A., & Sons, Inc., Peoria, Ill.
Marine Iron Co., Bay City, Mich.
Monongahela Mfg. Co., Monongahela, Pa.
Nelsonville Foundry & Machine Co., Nelsonville, O.
Ottumwa Iron Works, Ottumwa, Ia.
Power & Mining Machinery Co., 52 William St., New York.
Risdon Iron & Locomotive Works, San Francisco, Cal.
Stine, S. B., & Son, Osceola Mills, Pa.
Sullivan Machinery Co., 135 Adams St., Chicago, Ill.
Union Iron Works, San Francisco, Cal.
Union Iron Works, Inc., Spokane, Wash.
Vulcan Iron Works, Wilkesbarre, Pa.
Wellman-Seaver-Morgan Co., Cleveland, O.

98 **CARS, MINE.** See Finding List.

99 **CHANNELING MACHINES.** For forming channels in a mine.

Ingersoll-Sergeant Drill Co., 26 Cortlandt St., New York.
Patch, F. R., Mfg. Co., Rutland, Vt.
Rand Drill Co., 128 Broadway, New York. *See adv. page 21.*

100 CONCENTRATORS, ORE. For concentrating or separating ore.

Allis-Chalmers Co., New York Life Bldg., Chicago, Ill.
American Concentrator Co., Joplin, Mo.
Bryant, W. G., Carterville, Mo.
Colorado Iron Works Co., Denver, Col.
Cresson, Geo. V., Co., Allegheny Ave., W. of 17th St., Philda.
Davis, F. M., Iron Works Co., 8th & Larimer Sts., Denver, Col.
Denver Engineering Works Co., Blake & 30th Sts., Denver, Col.
Freeman, J. W., Joplin, Mo.
Fritsch, Arthur, Foundry & Machine Co., St. Louis, Mo.
Fulton Iron Works, San Francisco, Cal.
Hendrie & Bolthoff Mfg. & Supply Co., Denver, Col.
Hendy, Joshua, Machine Works, San Francisco, Cal.
Knoxville Foundry & Machine Co., Knoxville, Tenn.
Llewellyn Iron Works, Los Angeles, Cal.
Mecklenburg Iron Works, Charlotte, N. C.
Mine & Smelter Supply Co., Denver, Col.
Risdon Iron & Locomotive Works, San Francisco, Cal.
Stearns-Rogers Mfg. Co., 1718 California St., Denver, Col.
Union Iron Works, San Francisco, Cal.

101 CRUSHERS. See Finding List.

102 DREDGING MACHINES. See Finding List.

103 DRILLS.

104 Core. Which bring up a core in drilling.

American Diamond Rock Drill Co., 95 Liberty St., New York.
Cyclone Drilling Machine Co., Orrville, O.
Davis Calyx Drill Co., 128 Broadway, New York.
Ellison, Wm., & Sons, Mfg. Co., 1018 N. 6th St., St. Louis, Mo.
Gardner Electric Drill & Machinery Co., Cleveland, O.
Muirhead, John, & Son, Pittston, Pa.
Preslar-Crawley Mfg. Co., Cincinnati, O.
Standard Diamond Drill Co., Monadnock Blk., Chicago, Ill.
Sullivan Machinery Co., 135 Adams St., Chicago, Ill.

105 Diamond. See 104, Core Drills.

106 Electric. Operated by electricity.

Denver Engineering Works Co., Blake & 30th Sts., Denver, Col.
Gardner Electric Drill & Machinery Co., Cleveland, O.
Hercules Electric Drill Co., 32 Broadway, New York.
Jeffrey Mfg. Co., Columbus, Ohio.
Marvin Electric Drill Co., Binghamton, N. Y.
Sullivan Machinery Co., 135 Adams St., Chicago, Ill.

107 Hand.

Hasenzahl, William, Cincinnati, O.
Howell's Mining Drill Co., Plymouth, Pa.

108 Pneumatic. Operated by compressed air.

Chicago Pneumatic Tool Co., Fisher Bldg., Chicago, Ill.
Howell's Mining Drill Co., Plymouth, Pa.
Ingersoll-Sergeant Drill Co., 26 Cortlandt St., New York.

DRILLS, PNEUMATIC, continued

Rand Drill Co., 128 Broadway, New York. *See adv. page 21.*
Wood, Warren, Paterson, N. J.

109 **Prospecting.** See 104, Core Drills.

110 **Steam.** Operated by steam.

Allis-Chalmers Co., New York Life Bldg., Chicago, Ill.
Belleville Pump & Skein Works, Belleville, Il.
Cyclone Drilling Machine Co., Orrville, Ohio.
Le Grand Mine Drill Works, Wilkesbarre, Pa.
McKiernan Drill Co., 170 Broadway, New York.
Sullivan Machinery Co., 135 Adams St., Chicago, Ill.
Union Iron Works, San Francisco, Cal.

111 **DRIERS.** See Finding List.

112 **ENGINES, MINING.** See Finding List.

113 **FEEDERS, ORE.** For feeding ore to crushers.

Allis-Chalmers Co., New York Life Bldg., Chicago, Ill.
Bartlett, C. O., & Snow Co., Cleveland, O.
Davis, F. M., Iron Works, Co., 8th & Larimer Sts., Denver, Col.
Frenier, J. H., Rutland, Vt.
Fulton Iron Works, San Francisco, Cal.
Hammond Mfg. Co., Portland, Ore.
Hendrie & Bolthoff Mfg. & Supply Co., Denver, Col.
Hendy, Joshua, Machine Works, San Francisco, Cal.
Mecklenburg Iron Works, Charlotte, N. C.
Power & Mining Machinery Co., 52 William St., New York.
Union Iron Works, San Francisco, Cal.

114 **FURNACES, CALSING, SMELTING, ETC.** See Finding List.

115 **GRINDING PANS.** For grinding ore to be amalgamated.

Allis-Chalmers Co., New York Life Bldg., Chicago, Ill.
Carlin's, Thos., Sons, Co., Allegheny, Pa.
Hayden, P., Saddlery Hardware Co., Columbus, O.
Phillips & McLaren, Pittsburg, Pa.

116 **HOISTS, MINE.** See Finding List

117 **LAMPS, MINERS'.** Safety lamps used in mines.

American Safety Lamp & Mine Supply Co., Scranton, Pa.
American Tube & Stamping Co., Bridgeport, Conn.
Anton, George, Monongahela, Pa.
Everhart Brass Works, Scranton, Pa.
Hughes Bros., Scranton, Pa.
Hunt, Alexander E., Scranton, Pa.
Portable Electric Power & Light Co., Jersey City, N. J.
Queen & Co., Inc., 1010 Chestnut St., Philadelphia, Pa.
Shepard, Sidney, & Co., Buffalo, N. Y.
Somers, Fitler, & Todd Co., Pittsburg, Pa.

118 **MILLS, QUARTZ.** Roller mills for reducing quartz to small proportions.

Allis-Chalmers Co., New York Life Bldg., Chicago, Ill.

MILLS, QUARTZ, continued

Alsing, J. R., Co., 75 Guernsey St., Brooklyn, N. Y.
Dyer Bros., 240 Montgomery St., San Francisco, Cal.
Hendy, Joshua, Machine Works, San Francisco, Cal.
Kent Mill Co., 170 Broadway, New York.
Krogh Mfg. Co., 9 Stevenson St., San Francisco, Cal.
Marshutz & Cantrell, Main & Howard Sts., San Francisco, Cal.
Raymond Bros., Impact Pulverizer Co., 143 Laflin St., Chicago, Ill.
Risdon Iron & Locomotive Works, San Francisco, Cal.
Stillwell-Bierce & Smith-Vaile Co., Dayton, O.
Thompson & Boyle Co., Los Angeles, Cal.

119 **Stamp.** For reducing ore by stamping.

Allis-Chalmers Co., New York Life Bldg., Chicago, Ill.
Arizona & Sonora Mfg. Co., Nogales, Ariz.
Caird & Hawksworth, Helena, Mont.
Colorado Iron Works Co., Denver, Col.
Davis, F. M., Iron Works Co., 8th & Larimer Sts., Denver, Col.
Denver Engineering Works Co., Blake & 30th Sts., Denver, Col.
Globe Iron Works, Inc., Stockton, Cal.
Hammond Mfg. Co., Portland, Ore.
Hendy, Joshua, Machine Works, San Francisco, Cal.
Llewellyn Iron Works, Los Angeles, Cal.
Lombard Iron Works & Supply Co., Augusta, Ga.
McFarlane & Co., Denver, Col.
Mecklenburg Iron Works, Charlotte, N. C.
Merrall's Mill Co., San Francisco, Cal.
National Iron Works, Inc., Spokane, Wash.
Northwestern Iron Works, Seattle, Wash.
Portage Lake Foundry & Machine Co., Hancock, Mich.
Power & Mining Machinery Co., 52 William St., New York.
Risdon Iron & Locomotive Works, San Francisco, Cal.
Stearns-Roger Mfg. Co., 1718 California St., Denver, Col.
Union Iron Works, San Francisco, Cal.
Union Iron Works, Inc., Spokane, Wash.

120 **PULVERIZERS.** See Finding List.

121 **PUMPS, MINE.** See Finding List.

122 **SAMPLERS OR TESTERS.** Used by assayers for testing ores.

Allis-Chalmers Co., New York Life Bldg., Chicago, Ill.
Hendrie & Bolthoff Mfg. & Supply Co., Denver, Col.
Keystone Driller Co., Beaver Falls, Pa.
Ross, Chas., & Son Co., 16-20 Steuben St., Brooklyn, N. Y.

123 **SCREENS.** See Finding List.

124 **SEPARATORS, ORE.** For separating ore from quartz, earth, etc.

Allis-Chalmers Co., New York Life Bldg., Chicago, Ill.
Gold & Silver Extraction Co., Denver, Col.
Jeffrey Mfg. Co., Columbus, Ohio.
Raymond Bros., Impact Pulverizer Co., 143 Laflin St., Chicago, Ill.
Wetherill Separating Co., 68 Broad St., New York.

SEPARATORS, continued

125 **Magnetic.** In which a powerful magnet separates magnetic iron ore from sand or gangue.

American Concentrator Co., Joplin, Mo.
Ding's Electro-Magnetic Separator Co., Milwaukee, Wis.

126 **SIGNALING APPARATUS, MINE.**

American Safety Lamp & Mine Supply Co., Scranton, Pa.
Everhart Brass Works, Scranton, Pa.
Flint-Lomax Electric & Mfg. Co., Denver, Col.

127 **TIPPLES, MINE.** For tipping or dumping mine cars.

Allis-Chalmers Co., New York Life Bldg., Chicago, Ill.
Garry Iron & Steel Co., Coe & Lake Sts., Cleveland, Ohio. *See adv. page 23.*
Helmick Foundry & Machine Co., Fairmont, W. Va.
Heyl & Patterson, 51 Water St., Pittsburg, Pa.
Jeffrey Mfg. Co., Columbus, Ohio. *See adv. page 21.*
Kenney & Co., Scottdale, Pa.
Minneapolis Steel & Machinery Co., 2854 Minnehaha Ave., Minneapolis, Minn.
Monongahela Mfg. Co., Monongahela, Pa.
Mullen, John, & Son, Shamokin, Pa.
Nelsonville Foundry & Machine Co., Nelsonville, O.
Scaife, Wm. B., & Sons Co., 221 1st Ave., Pittsburg, Pa.
Sullivan Machinery Co., 135 Adams St., Chicago, Ill.
Wagner-Palmros Mfg. Co., Fairmont, W. Va.
Wellman-Seaver-Morgan Co., Cleveland, O.

128 **TOOLS, MINERS'.**

Armstrong Mfg. Co., Bridgeport, Conn.
Atlas Pipe Wrench Co., 123 Liberty St., New York.
Beall Bros., Alton, Ill.
Bignall & Keeler Mfg. Co., Edwardsville, Ill.
Cummings, W. J., Wellston, O.
Hardsocq, Martin, Mfg. Co., Ltd., Allegheny, Pa.
Kelly & Jones Co., Pittsburg, Pa.
Phillips Mine & Mill Supply Co., Pittsburg, Pa.
Scranton Supply & Machinery Co., Scranton, Pa.
Somers, Fitler & Todd Co., Pittsburg, Pa.
Trimont Mfg. Co., Roxbury, Mass.
Warwood Tool Co., Wheeling, W. Va.
Wells Bros., & Co., Greenfield, Mass.
Wyoming Shovel Works, Wyoming, Pa.

129 **WASHERS, ORE.** For cleansing ore from foreign matter.

Bacon, Earle C., 26 Cortlandt St., New York.
Jeffrey Mfg. Co., Columbus, O. *See adv. page 122.*
Link-Belt Machinery Co., 39th St. & Stewart Ave., Chicago.
McLanahan Stone Machine Co., Hollidaysburg, Pa.
Scaife, Wm. B., & Sons, Co., 221 1st Ave., Pittsburg, Pa.
Sullivan Machinery Co., 135 Adams St., Chicago, Ill.
Tamaqua Mfg. Co., Tamaqua, Pa.

This belt has been treated with Cling-Surface and was transmitting 55 H. P. without the slightest evidence of slipping when photograph was taken. It has done this for 10 months now, day after day. It's a 14 in. belt, 10 ft. centers.

Cling-Surface For Your Belts.

Cling-Surface is a filler for belts. It does its work after it penetrates. It is not a sticky surface dressing.

It permanently stops belt slipping so that full load can be carried with no loss or annoyance.

Because there is no slipping, belts can be run easy, free from dead load of tightening strain.

They will last longer and do more work.

And we guarantee Cling-Surface to preserve them, keeping them pliable and in perfect condition.

Order on trial. Test. Pay only if satisfactory. If not return and we pay all freight.

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MUNHALL, PA., Nov. 12, 1901.

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Gentlemen:—In June, 1900, we had the 12-inch belts on 7-80 Brush Arc machines stretched as far as tightening slide would allow, at which point belts would have to be shortened.

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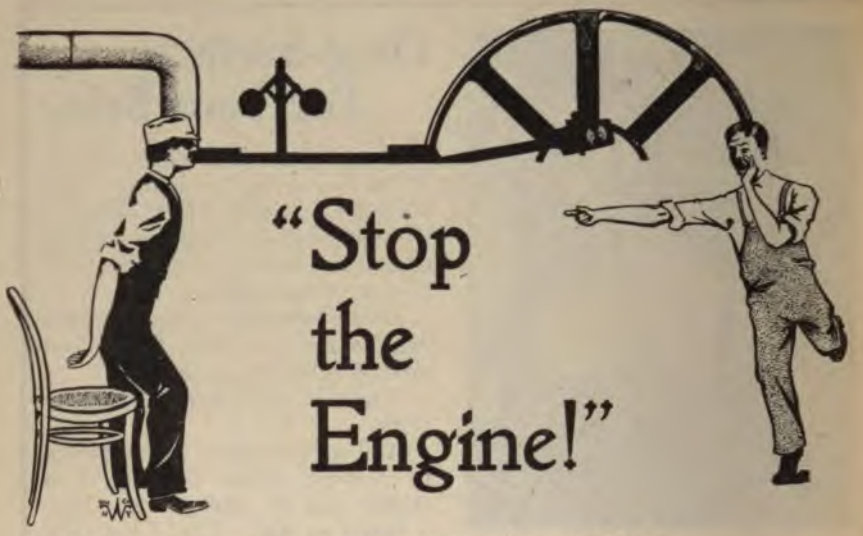
Cling-Surface, giving best results, was adopted. We are now running same belts, not yet shortened, slacked up so that they sag to within about 8 inches of tight side when loaded, giving maximum wrap on pulley and minimum side pull on bearings.

We are well satisfied with results obtained, and feel free to recommend Cling-Surface to all belt users.

Yours very truly,
S. S. WALES,
Supt. Electrical Dept.



"Stop the Engine!"

—Perhaps it is only the breaking of a machine.

—Possibly a workman's life is in danger.

—Either way, the engine must be stopped with the least possible delay.

Factory accidents are likely to happen at any time—they are expensive and dangerous.

The Engineer can't stand with his hand constantly upon the throttle—ready to act.

But there are times when the engine must be stopped whether he is ready or not.

If your engine was under such control that it could be stopped in less than 30 seconds, and from any point in the factory, the danger element is almost eliminated.

Any kind of an engine can be shut down in 40 to 60 seconds, by simply pressing the button, if the other end is connected with THE MONARCH ENGINE STOP AND SPEED LIMIT SYSTEM.

The Speed Limit is absolutely automatic.

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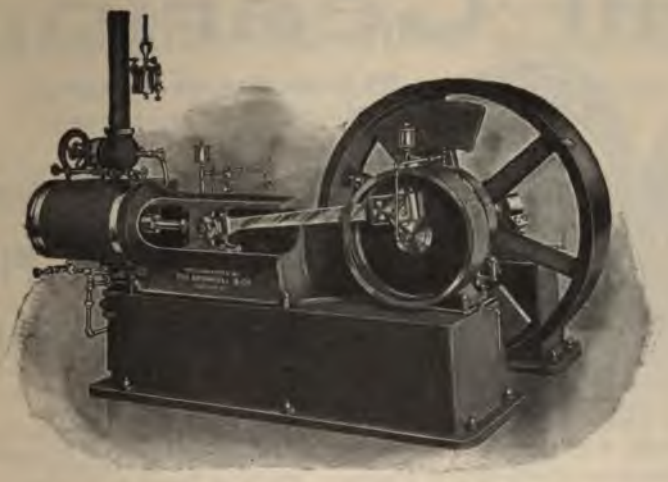
A postal will do.

The Consolidated Engine Stop Co.

100 Broadway, New York.

THE SCRANTON LACE CURTAIN CO., PAUL B. BELIN, Gen'l Mgr., Scranton, Pa., says:—"Some time ago, one of the employees in the winding room was caught in the winding machinery. He was caught in such a position that his arm would undoubtedly have been torn off if the machinery had not been stopped. Fortunately the forelady had presence of mind enough to press the button. Everything was running, and under this load the engine stopped very shortly."



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Can be applied economically to any type furnace. Cleaner flues.

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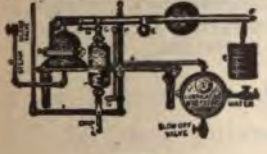

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After years of experience in catering to the wants of the most discriminating manufacturers of lighting plants, we are supplying steam motors combining all requisites necessary for dynamo driving, either belted or direct connected. We can furnish prices on complete outfit, using any make of dynamo specified, and we solicit inquiries.

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INSIDE SPLIT CASE.

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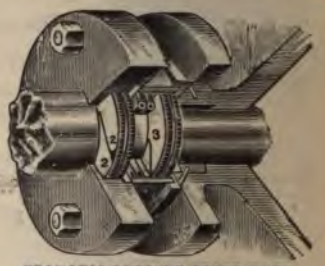

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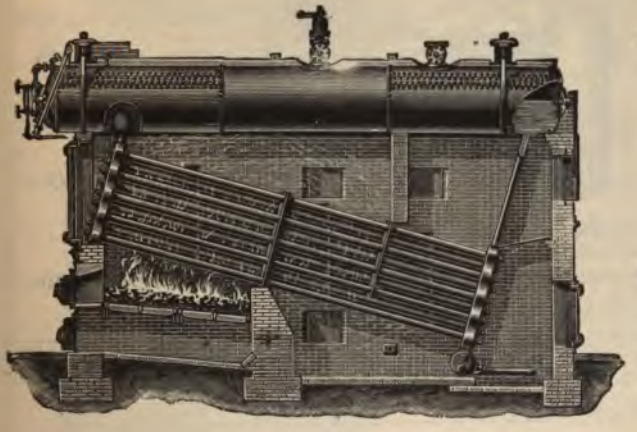

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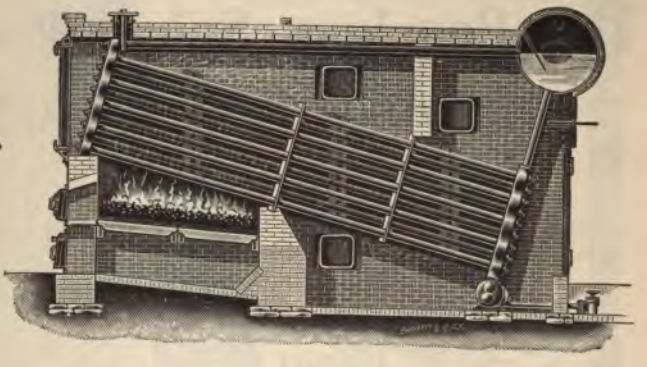

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It will hold 400 lbs. of Steam.

1-4 to 2 inch diameter.

Will run twelve months in High Speed Engines.

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OTIS Tubular Feed Water HEATER

Oil Separator and Purifier

With Seamless Brass Tubes.

Guaranteed to heat the feed water to the **boiling point** (210 degrees or 212 degrees) with the exhaust steam without causing any back pressure. **Also to extract the Oil from the Exhaust** so that the exhaust steam after being passed through the heater can be used for heating purposes and the water of condensation from the heating system be returned to the boiler without the extra expense of an additional oil separator or eliminator.

We Guarantee this Heater will not get Foul with Sediment.

A LIBERAL OFFER.

Try us! If this Heater fails to Give Satisfaction in every respect we will pay freight, cartage and all expenses, heater to be returned to us at our expense.

POWER PUMPS of all kinds

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The Stewart Heater Co.,

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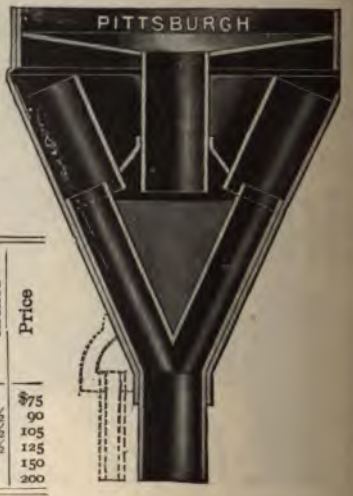
Meets all requirements of modern boiler practice. Can be opened or closed as often as desired without injury, being fitted with a metallic disc and holder. Disc easily removed and replaced at slight expense. Suitable for pressure up to 250 lbs.

Size	1½	2	2½	3
Price each, screwed or flanged	$15.00	15.00	20.00	30.00
Distance center to inlet or outlet, screwed	4½	4½	5	5¾
Distance center to inlet or outlet, flanged	4½	4½	5¾	6⅝
Diameter of flanges	6	6	7	7½

The Pittsburgh Vacuum Exhaust Head

Positively removes grease and water from the escaping vapor, leaving it dry and free, thereby preventing rotting of roofs and walls, spattering of pavements and buildings and accumulation of ice. The exhaust to the air is free and noiseless with no back pressure on the engine.

The case and pipes are of heavy galvanized iron, 14 to 20 gage, according to size, all joints are close riveted and brazed, the internal pipes being double braced. Sizes above 6 inch are flanged.



Exhaust Pipe, Inches	Diameter, Inches	Height, Inches	Drip Outlet, Inches	Price	Exhaust Pipe, Inches	Diameter, Inches	Height, Inches	Drip Outlet, Inches	Price
1 or 1½	2 x 13	17	1¼	$20	7	8 x 33	41½	2	$75
2 or 2½	3 x 16	21	1½	25	8	9 x 36	45½	2½	90
3 or 3½	4 x 19	24	1½	30	9	10 x 40	50½	2½	105
4 or 4½	5 x 22	28	1½	40	10	11 x 44	55	2½	125
5	6 x 25	32	2	50	12	12 x 48	60	3	150
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We have published a beautiful booklet "I" entitled "The White Star," containing numerous halftones, showing the entire filtering operation and process of cleaning, and giving full information. Send for it and learn all about a perfect and practical filter.

"It has saved us 25 per cent. on our oil bills, besides giving better service than the filter we formerly had. Permit us to congratulate you for making a filter that WILL FILTER."

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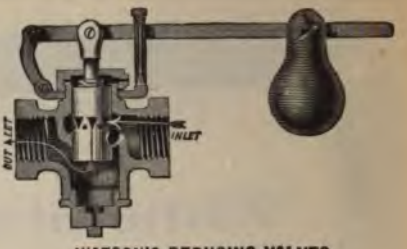
Discharges Continuously and Never Blows Steam.
Made Extra Heavy for High Pressures.



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Made for All Purposes.
Steam, Water, Gas and Air.

WE ALSO MANUFACTURE

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Also Iron, Brass and Copper COILS for HEATING and COOLING.

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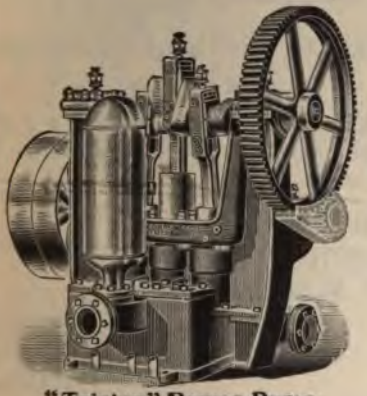

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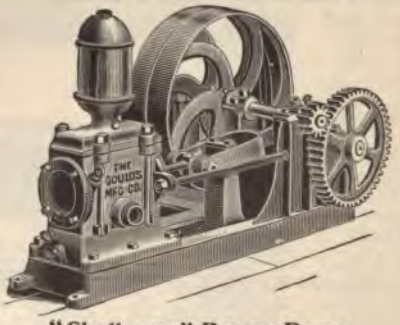

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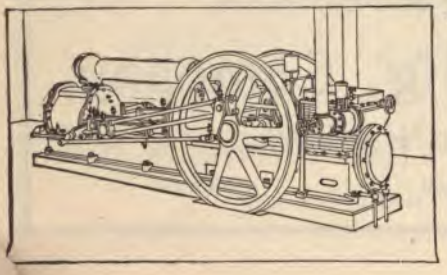

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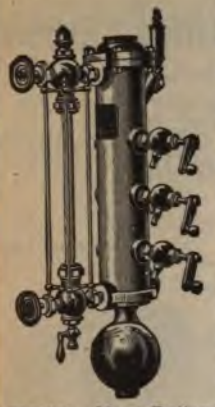

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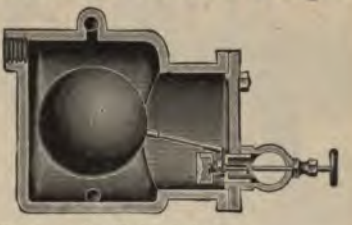

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Mechanical in design.
Operates with a float balance valve. Works under low or high pressure. Easily accessible for inspection.
Unexcelled in capacity, efficiency and durability. Write for circulars and prices.

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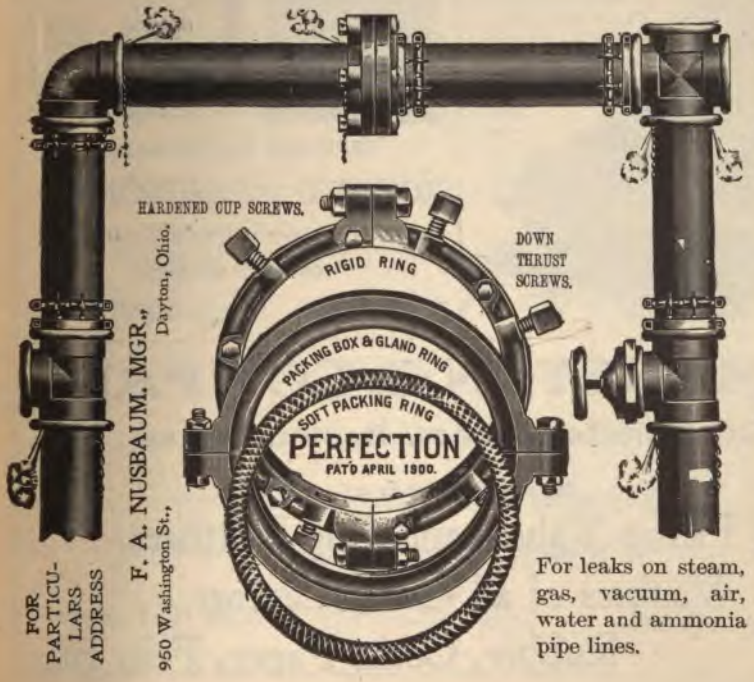

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AT LESS THAN $1.00 PER INCH WE STOP ALL YOUR LEAKS AND SAVE YOUR DOLLARS. THE PERFECTION LEAK CLOSING CLAMP DOES IT. GUARANTEED AND SENT ON APPROVAL. WRITE FOR OUR OIL FILTER AND CLAMP PRICES AND REFERENCES. OUR GOODS SECOND TO NONE.

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"Columbus" Gas and Gasoline Engines

Built by

Columbus Machine Co.

Columbus, Ohio.

Simple, easily adjusted, understood and operated.

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MANUFACTURERS OF

Stone Hoisting and Pile Driving Engines

Crabs and Derrick Irons a Specialty.

A full line of Engineer's Supplies, Pipe Fittings, Brass Goods and Packing.

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MACHINERY

66-70 West Broadway, - New York

"Direct" Differential Pulley Block.

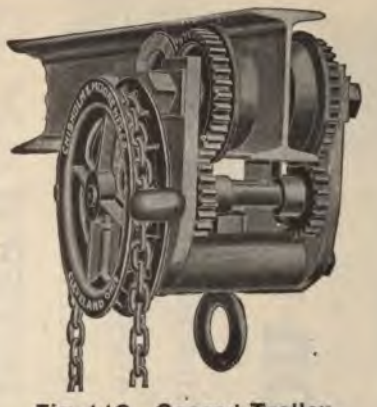

Fig. 112. Geared Trolley.

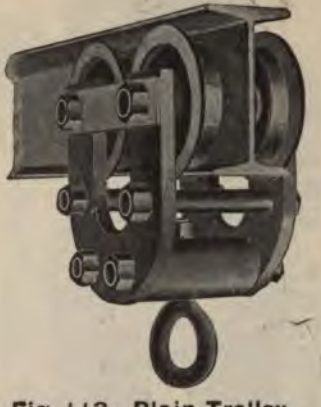

Fig. 113. Plain Trolley.

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Forged Frame, Steel Roller Bushed.

Adjustable to any size I Beam. Nine sizes, 1 to 10 tons capacity.

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Morse Flexible Gearing

The most efficient power transmitter made and applicable to a range of service extending from the heavy main drives direct from engine or motor with short centers, to the light drives of individual machines or machine feeds.

The Morse Chain is noiseless, will convey the maximum of power, can be run at highest speeds, used where belts or gears would be useless, is not affected by heat, dust or moisture, is constructed to stand the hardest service and will not grow slack nor lengthen from lack of lubrication. It is particularly adapted for high speeds, because the *rocker joint*—the essential feature of the chain—*requires no lubrication.*

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Hindley Worm Gearing

has twenty-five per cent greater efficiency than ordinary gearing and lasts longer

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Jackson Belt Lacing Machine.

and save time and money. Laces a six-inch belt in three minutes—laces a five inch belt with wire coil lacing at a cost of one cent. Does the work better than can be done by skiving or gluing, makes an even join, alike on both sides, and lasts longer than any other kind of lacing. Easily and quickly removed when different adjustments are required.

6,000 inches Coil Clasp Lacing FREE with each machine.

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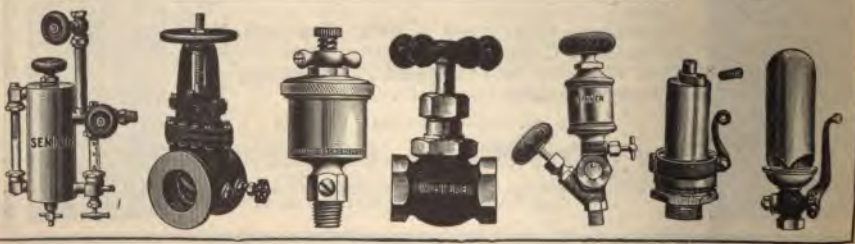

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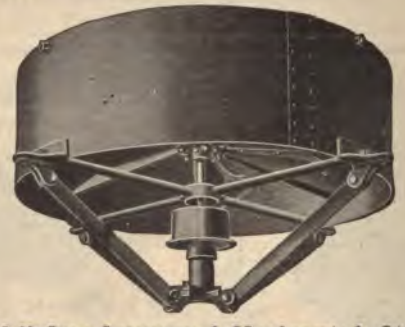

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